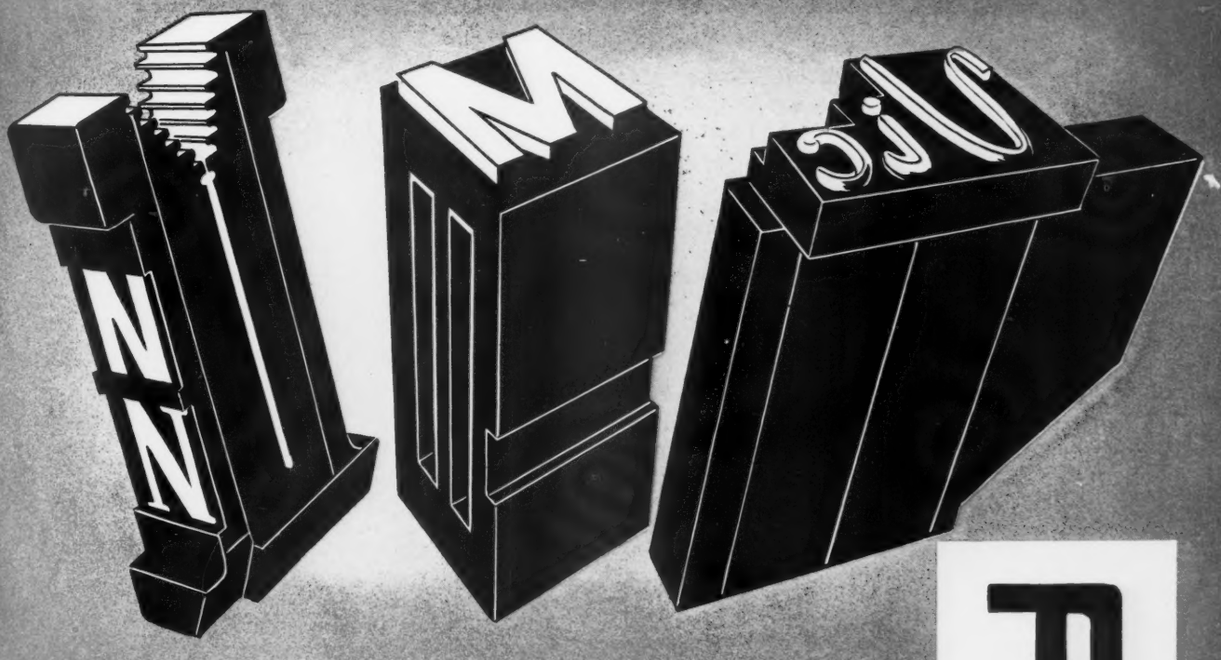
PRINTING EQUIPMENT ENGINEER



JUNE 1939

A TECHNICAL PUBLICATION FOR PRODUCTION AND MECHANICAL EXECUTIVES IN THE GRAPHIC ARTS INDUSTRY

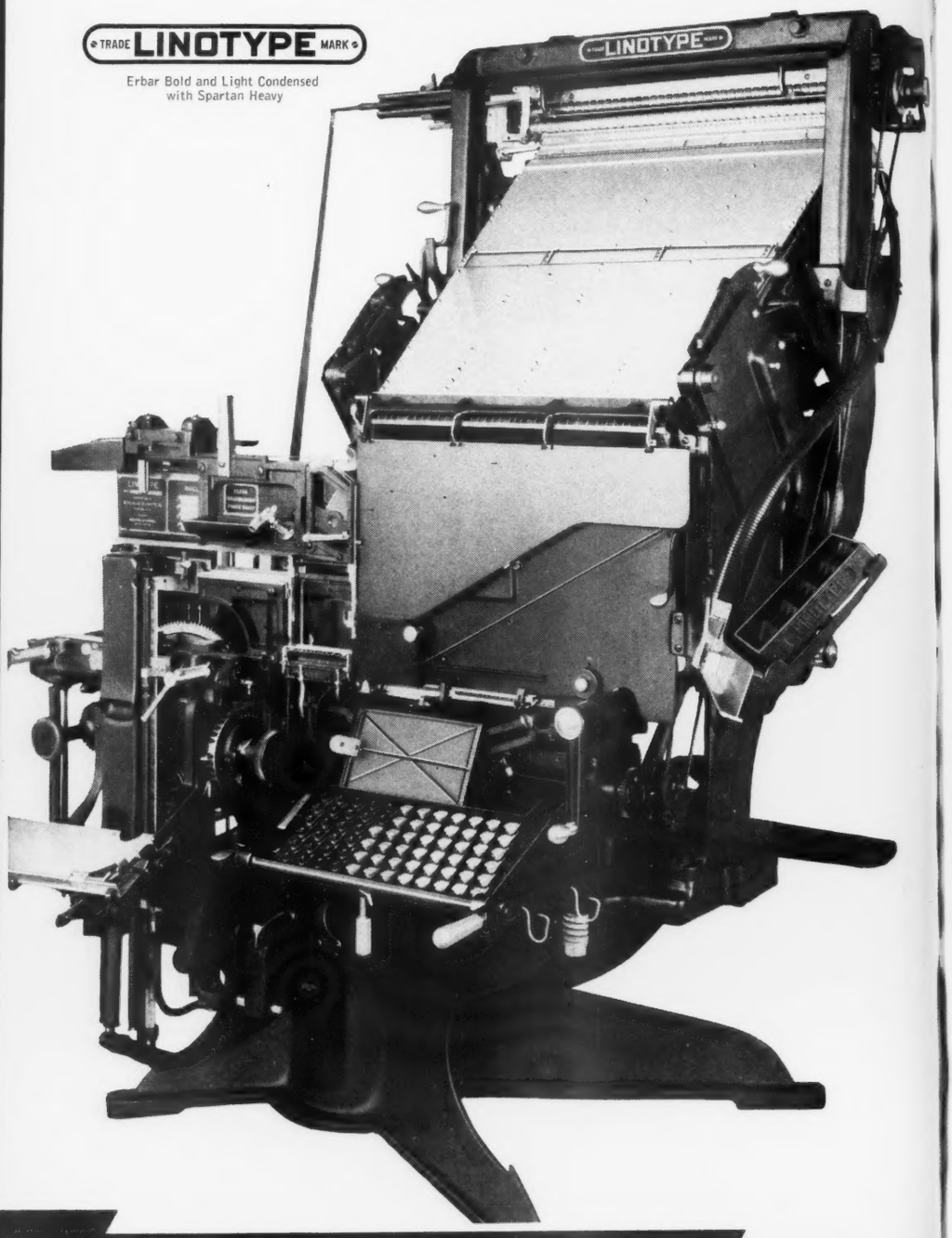
A NEW EXTRA RANGE DISPLAY LINOTYPE

MODEL 33

Meet the newest member of the Blue Streak family, Model 33. It grew out of the famous Model 27, and boasts many important new features. Four wide 72-channel magazines, either full length or split, can carry up through normal 36 point. Inbuilt "Magazine Quick-Change" rails permit changing magazines in the exclusive Linotype Vertical Lift way. And Linolite construction contributes to the easy change. One-Turn Shift, Optic-Aid Front, and many other important advantages make this new Linotype the "tops" for high-speed display composition.

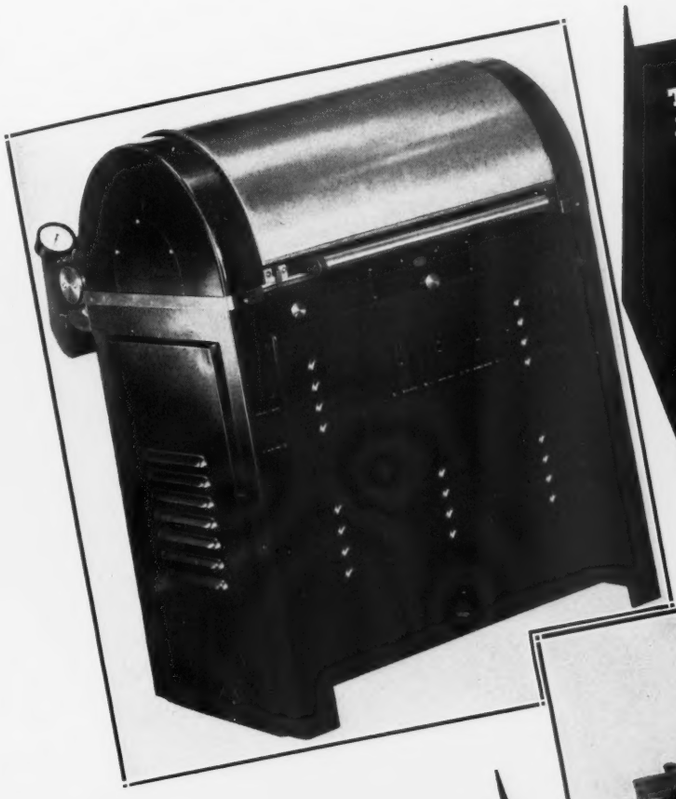
TRADE LINOTYPE MARK

Erbar Bold and Light Condensed
with Spartan Heavy



THE BLUE STREAK LINOTYPES

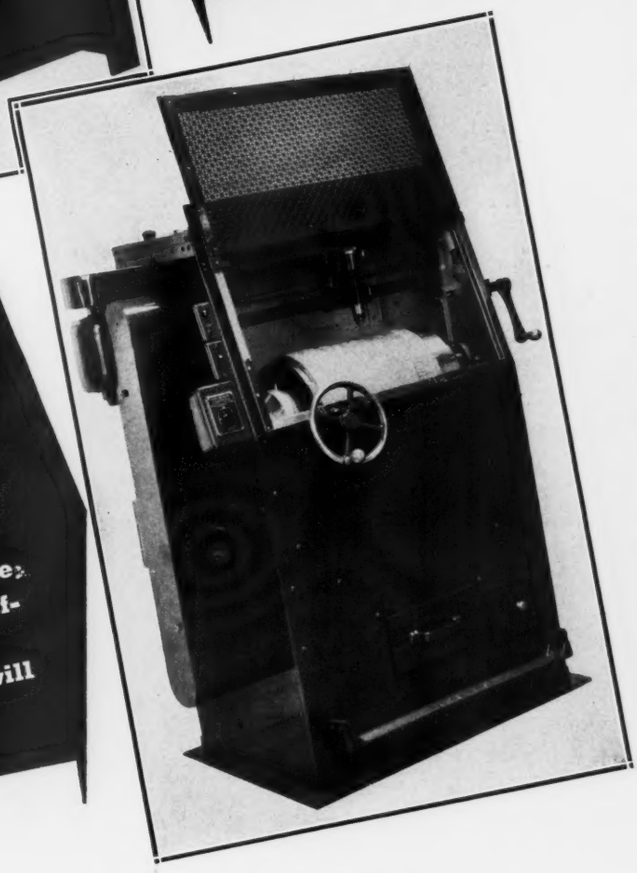
STA-HI'S TWO SENSATIONAL NEW MACHINES



THE STA-HI MASTER FORMER. A new teammate for the brilliant Junior Former and The AUTO-FORMER.

New automatic features never before used in dry-mat routine. New higher efficiency in production lowering costs, and speeding up output, faster get-away.

You will be interested in the tremendous advance made in this New Sta-Hi—a circular for the asking.



THE STA-HI ROUTOMATIC—CURVED ROUTER. A revelation in new design and performance.

Built for fast exacting work in curved routing, with ease and comfort for the operator.

Many novel and new features, exclusive with The ROUTOMATIC, and not offered to the trade heretofore.

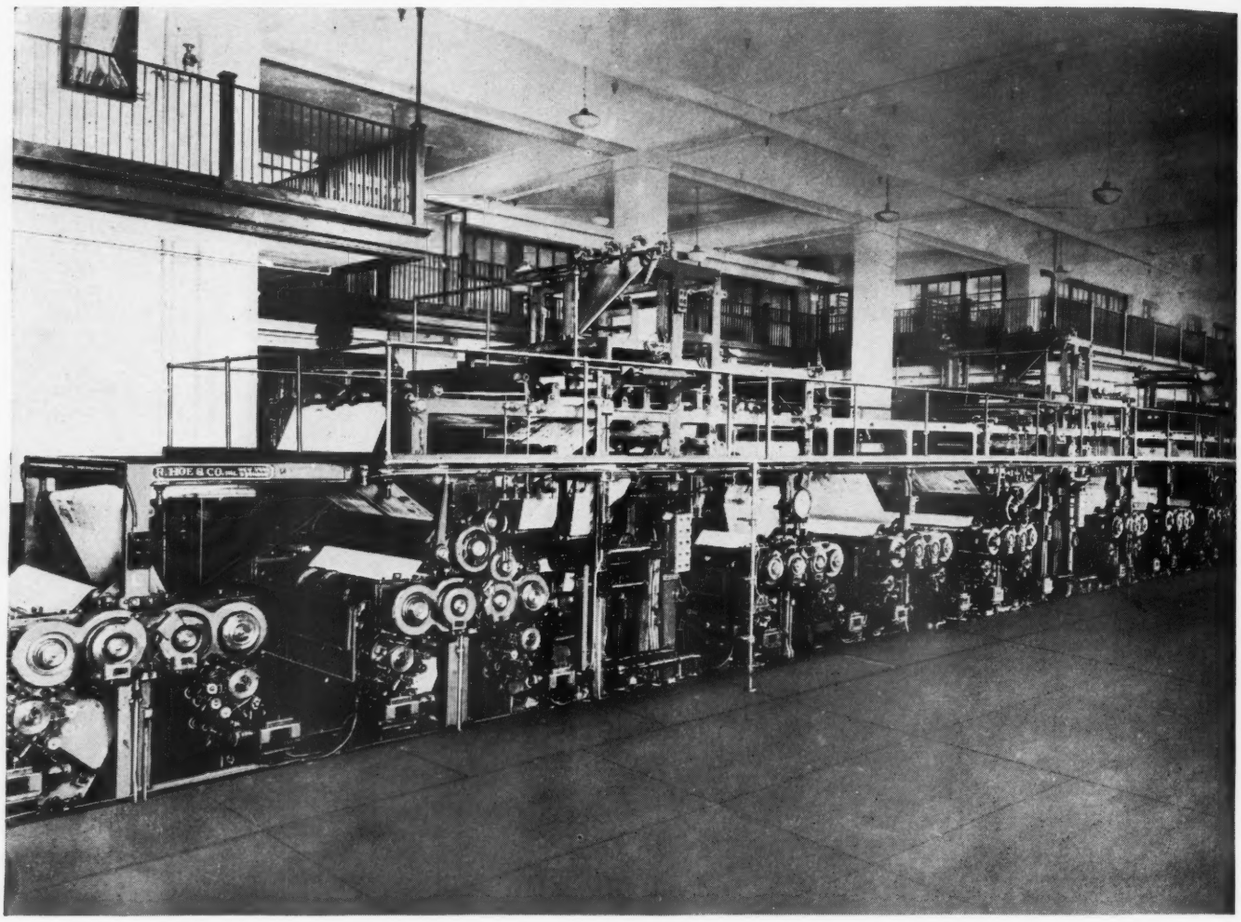
Be sure and write for circular, you will find it interesting.

See These Amazing New Machines at Philadelphia A. N. P. A. Conference

STA-HI CORPORATION

1020 CROCKER STREET **LOS ANGELES, CALIF.**

The Asset Values of Goodrich Printers' Rollers Are Summed Up in the Evening Public Ledger



View showing portion of the Philadelphia Evening Public Ledger's 48 press units which are equipped with Goodrich Printers' Rollers.

GOODRICH Printers' Rollers have contributed no small part to the Philadelphia Evening Public Ledger's reputation for high quality printing. As one of the pioneer Goodrich users, their first installation dates back to 1921. These rollers proved so successful that, today, the greater portion of their 48 press units are Goodrich equipped.

But better printing is not the only advantage of Goodrich Rollers which has made them a favorite in the Ledger's pressroom. Some of the rollers, which were a part of the original installation, are still running, after many years' continuous service, without having been recovered. Long life, freedom from delays due to washup and resetting, continued efficiency regardless of temperature — every one of these features has made for smoother and more economical press operation.

Through the use of Goodrich Printers' Rollers you, too, can dress up the appearance of your paper at a lower printing cost. You can check these facts by simply visiting the pressrooms of nearby Goodrich users. A list of such papers in your locality, along with prices and complete information, can be obtained by writing Niles and Nelson, Inc., New York.

NILES & NELSON, INC., EXCLUSIVE DISTRIBUTORS
75 West Street, New York · 400 West Madison Street, Chicago, Ill.

Goodrich *Printers'* Rollers

SPECIFY

CLINE-WESTINGHOUSE

MOTOR AND CONTROL

for

Newspaper Presses

Rotogravure Presses

Color Presses

and

Auxiliary Equipment

USED IN THE BEST ENGINEERED PLANTS

●

THE CLINE SYSTEM INCLUDES

Unit Press Drive and Control
Double Motor Drive and Control
Magazine Type Single Motor Control
Rotogravure and Color Press Control
Stereotype Motor Equipment
Cline Reels and Automatic Electric Tension
Cline High Speed Pasters
Paper Roll Conveyors
Plate Conveyors and Droppers
Typesetting Machine Drives

Tell Us Your Problems — Our Engineers Have the Experience and Facilities to Serve

CLINE ELECTRIC MFG. CO.

NEW YORK • CHICAGO • SAN FRANCISCO

CLINE • WESTINGHOUSE

An Important New Contribution

to BETTER HIGH-SPEED PRINTING

—a Balanced Three-Piece "Semi-Hard" Packing

AFTER long development and testing Goodyear now announces a signal advance in packing for modern high-speed presses—a balanced three-piece "semi-hard" packing. By balanced we mean that the three component blankets are designed and built to work together as a unit with controlled resiliency that insures a fast, unfailing "comeback" that keeps pace with press speed.

This new dress consists of the following units:

GOODYEAR RED TOP UNDERBLANKET—*the most popular and widely used underblanket in existence. Long use has demonstrated its definite superiority in cushioning and dissipating shock next to the cylinder—and in maintaining gauge.*

GOODYEAR SYNTHETIC INTERMEDIATE PRESS BLANKET—*a new-type blanket made of highest quality synthetic rubber reenforced with plies of fabric. It is highly resistant to oil and solvents. Its resiliency is regulated to insure perfect coordination with the action of Red Top Underblankets.*

GOODYEAR HI-SPEED DRAWSHEET—*new—made of extra-strong fabric coated with a specially developed synthetic rubber highly resistant to oil and solvents used in news inks. It is prestretched, hence stays put. Holds gauge, does not bolster, mar or retain leader marks. Prints both type and cuts sharp and clean — solids black. Gives exceptionally long economical service.*

Pressmen who are using this new Goodyear three-piece packing are extremely enthusiastic about the improved print they are obtaining with it. A trial on one press will convince you that this is the ideal packing you have been seeking for high-speed work. For information, write Goodyear, Printing Supplies Department, Akron, Ohio.

Also distributed by:

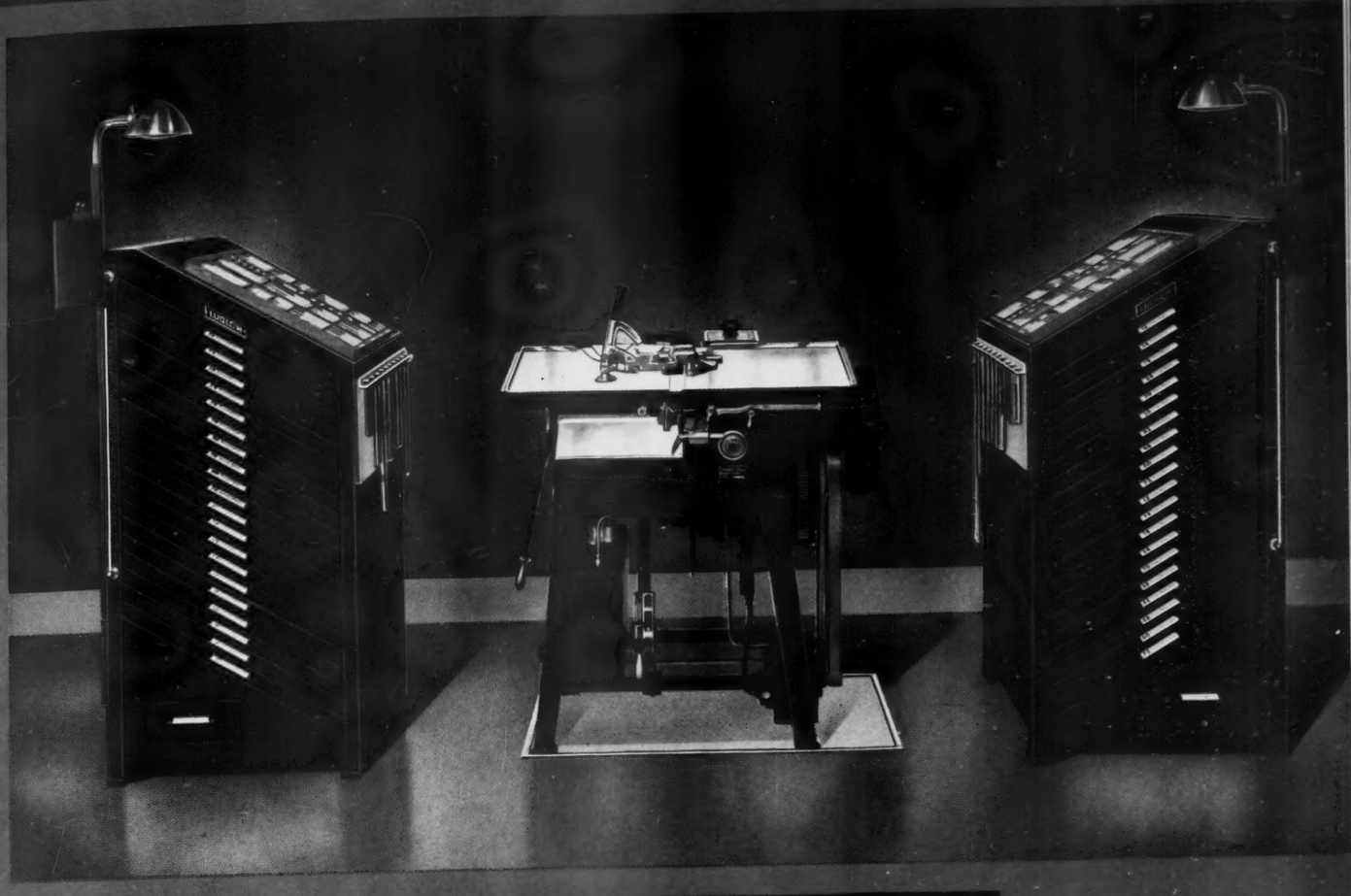
J. THOMAS McHUGH COMPANY, 305 Merchants Bank Building, Indianapolis, Indiana • GEORGE RUSSELL REED, JR., 431 Clay Street, San Francisco, California.

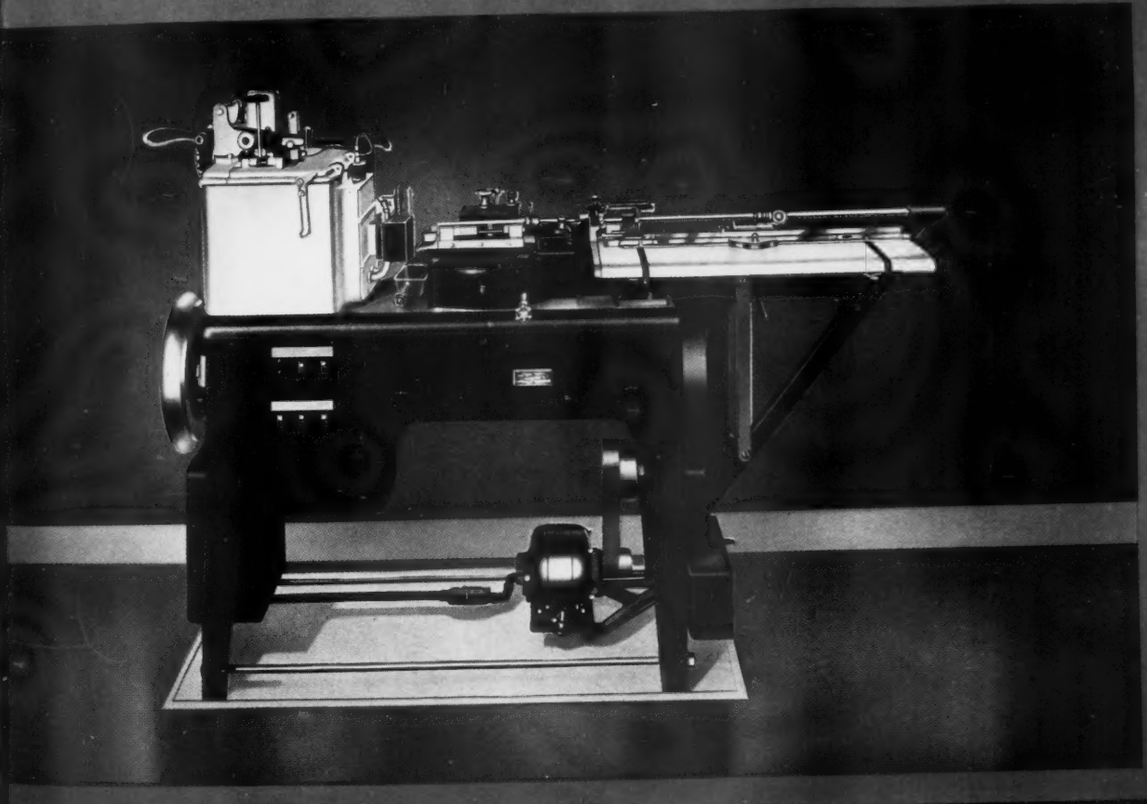
THE GREATEST NAME IN RUBBER

GOODYEAR

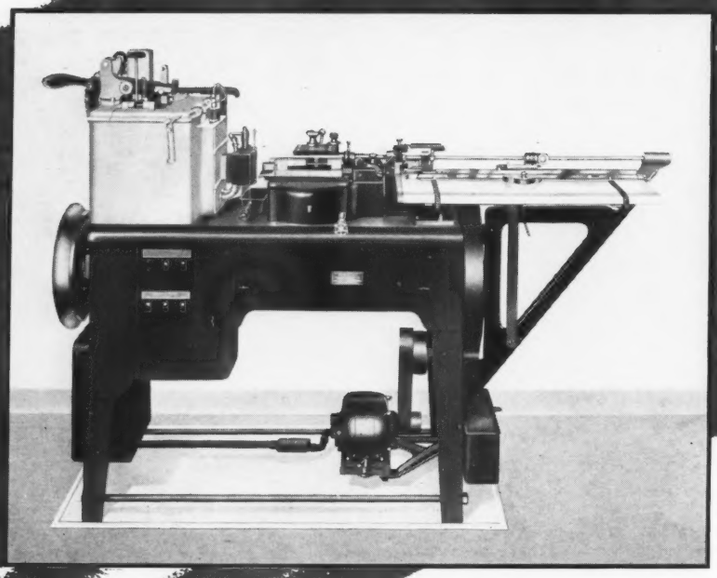
MORE NEWSPAPERS ARE PRINTED ON GOODYEAR *RED TOP* UNDERBLANKETS THAN ON ANY OTHER KIND

LUDLOW and ELROD





Composing Room Efficiency



Some ELROD Features which help the mechanical executive to operate his composing room more efficiently. . .

1 The Elrod produces strip material with the minimum of attention from an operator. The main requirements are occasionally to replenish the supply of metal in the crucible and to remove the stacked lengths of strip product from the delivery table.

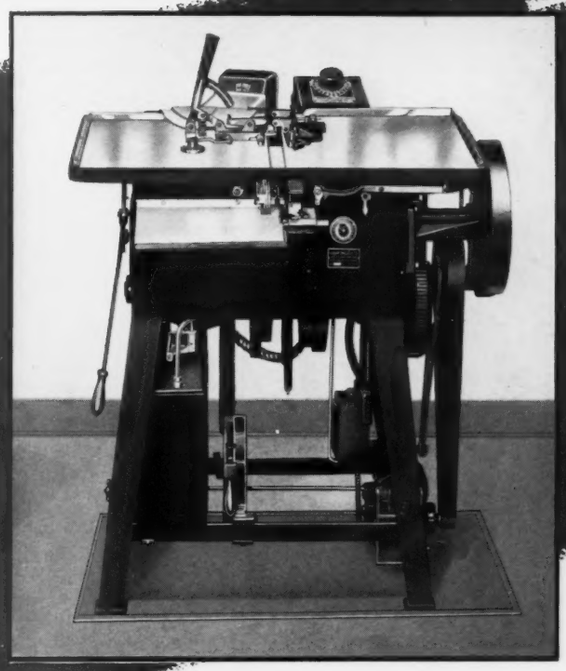
2 With a single, simply-operated machine is produced strip ranging in thickness from 1-pt. to 36-pt. in any desired height or length.

3 Formed of molten metal under pressure into a continuous strip as it passes through the water-cooled mold, Elrod-cast strip is exceedingly solid, and free from brittle breaks and welds. Elrod base stands up under the most severe pressure in mat rolling.

4 An abundant supply of Elrod-cast leads, slugs, rules and base ready for compositors' use, makes for true operating economy in any composing room.

5 The simplicity of the Elrod, in construction as well as in operation, ensures trouble-free production of this ample supply of strip material which is so essential to efficient composing room operation.

★ LUDLOW TYPOGRAPH COMPANY



Some LUDLOW Features which composing room executives have found help them to operate more efficiently. . .

1. Because Ludlow matrices are gathered, rather than picked up a letter at a time, and because of the facility of spacing and of the elimination of spacing "tight to lift," and for other reasons, production of display lines is speeded up with the Ludlow.

2. The Ludlow affords complete flexibility, with easy and rapid changes of size and face. Superior price figures, lines of mixed typefaces, grocery composition, and other specialized requirements are efficiently set the Ludlow way.

3. Because lines are set in matrices and cast in sluglines, there is no type supply to run out and typefaces are always new and unbroken.

4. With display lines Ludlow-set the composing room can achieve the efficient ideal of all-slug make-up.

5. Marked savings in floor space are effected when the Ludlow is installed for display composition.

6. The simplicity of the Ludlow, in construction as well as in operation, ensures trouble-free production of important display lines.

LUDLOW TYPOGRAPH COMPANY ★

THE FASHION SHOP
CHICAGO'S Accessories Center
POLKA DOT Kerchief
in BLUE RED GREEN $1.00
Buy several—the same color, or in contrasting shades
THIS Bag
BERGERE'S Eau de Cologne
In Fancy Boudoir Bottle
HEAT—
A REAL WINTER PROBLEM
WILLIAM HERMANN COAL
744-48 East Meridi
FRIDAY
SALE
House Coats
$17.95
Manhattan
SHIRT SALE
All better shirts reduced. Broadcloth woven madras, oxford cloth. Fancies, whites, and blues. Will not shrink. Sizes 14 to 17 . . . . . $1.65
Outstanding Anniversary value. Full cut, fast color, fused regulation collar. Blues, grays, greens. You will want at least three at this low price. Sizes 14 to 17 . . 59 cents
Fine count white pre-shrunk broadcloth, neatly tailored, full cut with non-wilt and soft collars. You will want to buy a dozen at this low price. Formerly $1.75 Now $1.19
A new shipment of well known brands. Cut to fit. Newest and better patterns. Sizes 14 to 18. Plenty of white broadcloth included.
★ ONLY AT Klinemann's
these washable Coolsheer PRINTS
YARD 95c
Such fashion magic in the designs, such excitement and subtlety in the colors! Your spring wardrobe can be full of successes! Imagine, for instance—a town suit of tiniest white polka dots on crushed raspberry, an afternoon dress of chartreuse patterned in black, for evening, a misty print of soft rose, green, grey blue
Specials for Monday
Fresh EGGS
25c DOZ.
All our eggs are guaranteed
Simplified Refrigeration
SEE IT TODAY
✓ "Super-Powered" Package Unit. Purposely built about ten per cent oversize to take care of the extra ice cubes and provide enough refrigeration, other, without effort.
ator. It opens the with full hands you rt.
es. Just a flip of the ays. No pulling. No ubes in record time. r, slow to very fast mperature needed.
sign... d style, t every o meet t afford
beginning Monday, May 25
Handbag Sale
$3.75
A one-owner used car is the best value in transportation
One-Owner Used Cars

The LUDLOW typeface program contributes materially to the success of newspaper composing room executives in setting display advertising which arrests attention, invites reading, and thus brings better sales results to advertisers—and in consequence—increased linage into their columns. ★

As is well known, the effectiveness of display advertising depends in large degree on the typefaces used for the display lines. Display typography is, therefore, a factor of importance in the prosperity of any newspaper.

For this reason, the Ludlow Typograph Company has bent every effort toward supplying its users with well-designed, up-to-the-minute typefaces when they are needed.

Not only have all the standard traditional typefaces been produced in matrix form in a full range of sizes, but the popular modern faces have also been promptly brought out. In addition, a number of successful wholly original display typefaces, such as Coronet Bold, Radiant, Eden, Hauser Script, Umbra, Mandate, and many others, have been made available only to Ludlow-equipped newspapers.

Specimens of Ludlow typefaces especially suited to use in newspaper display advertising will be gladly sent upon request.

And Ludlow's active program of typeface design and production is being, and will be, continued. Mechanical executives can count on the Ludlow organization to deliver the typefaces they need, when they need them.

LUDLOW TYPOGRAPH COMPANY

★ 2032 Clybourn Avenue • • • Chicago, Illinois

CCA
Member of Controlled Circulation Audit

PRINTING Equipment ENGINEER

Leading Articles for June, 1939:

THE ANPA PROGRAM - - - - - - - - - - - - 25
WORD EXHIBIT BROUGHT TO YOU - - - - - - - - 28
CONTROL OF TEMPERATURE AND HUMIDITY - - - - - 31
B. OFFEN
CONSTRUCTIVE NATIONAL ADVERTISING CAMPAIGN TO HELP PRINTERS MAKE A PROFIT - - - - - - - 33
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Printing EQUIPMENT *Engineer*, a monthly publication. Vol. 58, No. 3. Published at 1276 West Third St., Cleveland, Ohio. Don Will, Publisher. Mac Sinclair, Editor. Adam Henri Reiser, Associate Editor. Eastern Manager: Russ Birchfield, 509 Fifth Ave., New York, N. Y.; phone VAnderbilt 3-5191. Western Manager: E. P. Bloomster, 232 East Erie St., Chicago; phone SUperior 2444. Copyright 1939 by Willsea Pub. Co. Single copy, 25c; Reference Number, $1; subscription price per year $2 in advance. Printed in U. S. A.

Application is pending for acceptance under Act of June 5, 1934.

Plastic Binding U. S. Patent No. 1970285, License No. 9, The Brooks Company, Cleveland, Ohio.

A Technical Publication for the Mechanical Executive Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Field.

• • • BUILDING BIG PRESSES FOR 6 PROMINENT PUBLISHERS

Goss leadership in design and performance has been notably demonstrated by the decisions of six progressive publishers who recently placed sizable orders for Goss equipment.

The Omaha World-Herald purchased six fully enclosed, high speed, anti-friction units and one pair of folders.

The American Education Press, Inc., Columbus, Ohio, ordered a 32-page high speed, anti-friction magazine press.

The Arkansas Gazette, Little Rock, Ark., bought six fully enclosed, high speed, anti-friction units, one pair of folders and one single delivery folder.

The Greater Buffalo Press, Buffalo, N. Y., purchased a 16-cylinder multi-color press with two folders.

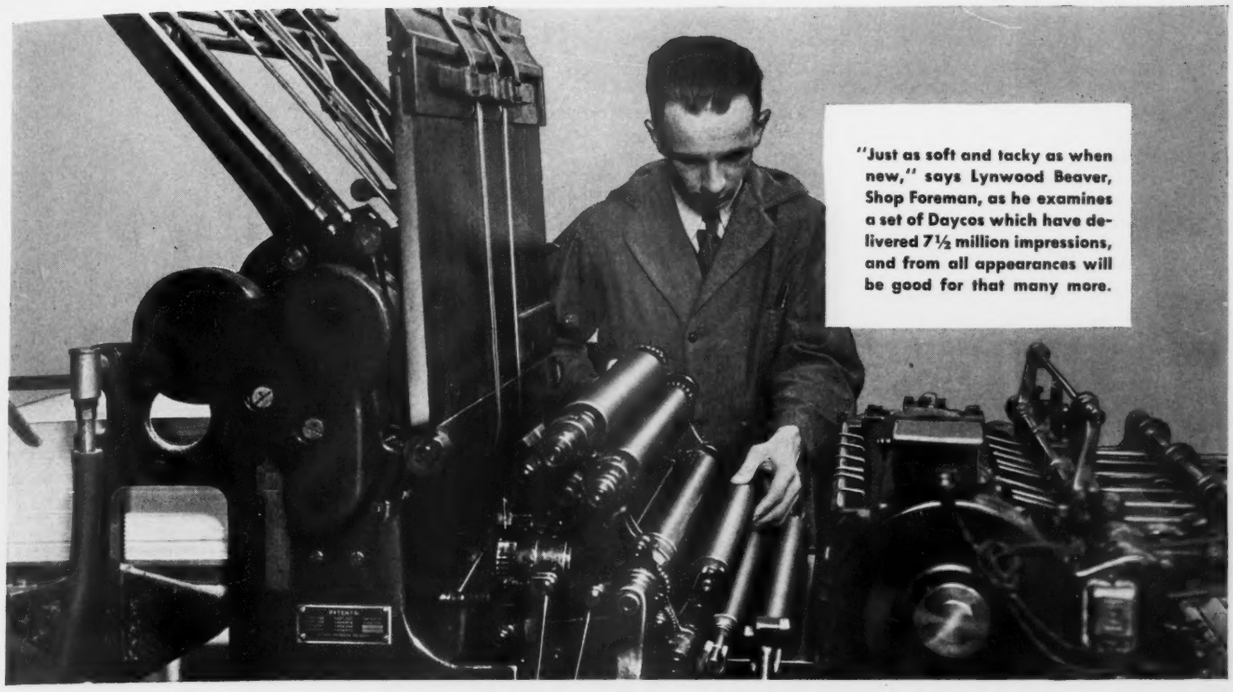
Two other large publishers have ordered extensive installations, comprising four magazine perfecting presses.

The significance of this activity is convincing evidence of publishers' faith in the future and their confidence in Goss engineering. Check up on the mechanical, economical, and safety features of Goss presses. Write now!

GOSS

THE GOSS PRINTING PRESS COMPANY
1535 S. PAULINA ST., CHICAGO

NEW YORK: 220 E. Forty-Second St. • SAN FRANCISCO: 707 Call Building
GOSS PRINTING PRESS CO., LTD., London, England


"Just as soft and tacky as when new," says Lynwood Beaver, Shop Foreman, as he examines a set of Daycos which have delivered 7½ million impressions, and from all appearances will be good for that many more.

Like Old Man River—

OUR DAYCOS KEEP ROLLING ALONG

"Still going strong after 7½ million impressions," says Mr. W. W. Holes, The Holes Advertising Press, Inc., St. Cloud, Minn.

In St. Cloud, Minnesota, the Holes Advertising Press, Inc., keeps mighty busy producing first-class printing, syndicated advertising and special publications.

And, as Mr. W. W. Holes says, it would be fine if everything ran as smoothly as their durable Dayco Rollers. The picture on this page tells its own story of a set of Daycos that have delivered 7½ million impressions and haven't yet shown any signs of quitting. As a matter of fact, from all appearances they have just hit their stride and like "Old Man River," they keep on rolling along.

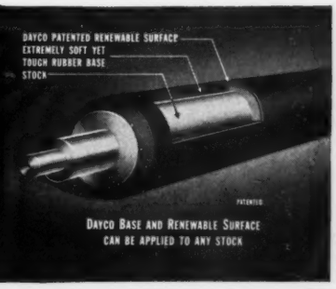
And note that these enduring Daycos, according to Mr. Holes, are just as soft and tacky as when new. Daycos are *tough*—their material is unaffected by the ingredients of inks and washes. They never lose their perfect affinity for ink—never get sticky or go dead—never vary with changing atmospheric conditions.

Ideally adapted for letterpress, offset and intaglio work, durable Daycos can also be applied to newspaper presses and special printing machines.

But why not find out for yourself how Daycos, the only *genuine* patented renewable surface type roller, can help you deliver top-quality production at lower cost? Just let a Dayco representative study your requirements and prescribe Dayco Rollers built specifically for your needs.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO
The Originators and Pioneers of Synthetic Rubber Printing and Lithographic Rollers

Dayco Rollers



BEHIND EACH PIG OF IMPERIAL METAL STANDS THE IMPERIAL METALLURGIST

This laboratory control assures every type metal user of an unvarying uniformity in Imperial metals. This is the underlying reason why Imperial, year after year holds a dominant position in the type metal industry.

Imperial **IMPERIAL TYPE METAL COMPANY** • PHILADELPHIA • NEW YORK • LOS ANGELES • CHICAGO

Aladdin had a Lamp—

YOU have IDEAL ROLLERS, which enable you to accomplish more than could a thousand old-fashioned genii.

The advancement in printing is nothing short of miraculous, and IDEAL ROLLERS have always kept a step ahead of the popular demand.

Why risk the appearance of the finished job and the advantages of low production costs on new high-speed machines by using anything but dependable IDEAL ROLLERS?

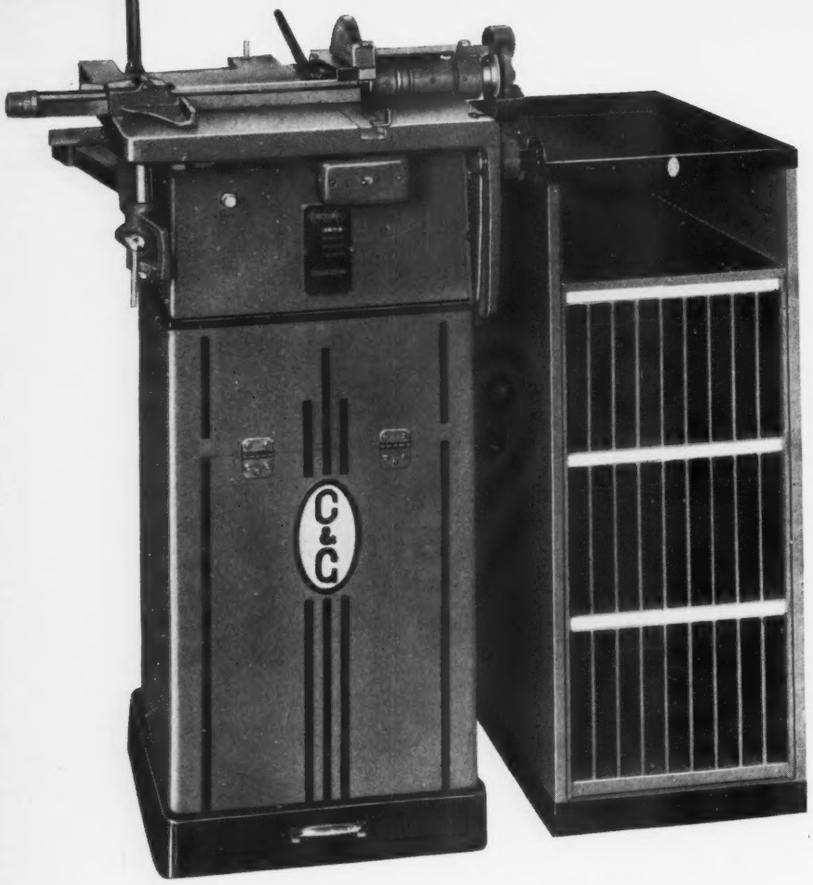
Your roller costs are only a fraction of the capital involved in producing any fine job of printing.

Equip your presses with IDEAL ROLLERS and enjoy the assurance of securing the finest results.

The services of a competent Ideal representative are available to make a thorough survey of the requirements of your plant without obligation.

IDEAL ROLLER & MANUFACTURING CO.
CHICAGO, ILLINOIS · LONG ISLAND CITY, NEW YORK
BRANCH OFFICES ARE LOCATED IN THE PRINCIPAL CITIES

1308 PLANTS USING 2173 C & G SAW TRIMMERS



No. 3-A C&G Saw Trimmer with Strip Material Cabinet. Cabinet extra, $35.00.

Points Influencing Purchase of C&G Saw Trimmers:

Unique, efficient hinged extension gauge. Out of way when not in use. Positioned instantly for measures to 135 picas. *Exclusive with C&G.*

Work clamped back of gauge. Greatest clamping capacity. Fastest, most accurate, safest to operate. Positively prevents slugs fanning. *Exclusive with C&G.*

Universal Blades—One blade for all sawing. Grinder sharpens blades on machine in 3 minutes. Patented. *Exclusive with C&G.*

Right and Left Hand Miter Vise—Makes both miters face up. *Exclusive with C&G.*

Miter and Lineup Gauge—Positive gauging of miters. Most accurate, flexible, efficient attachment of its kind.

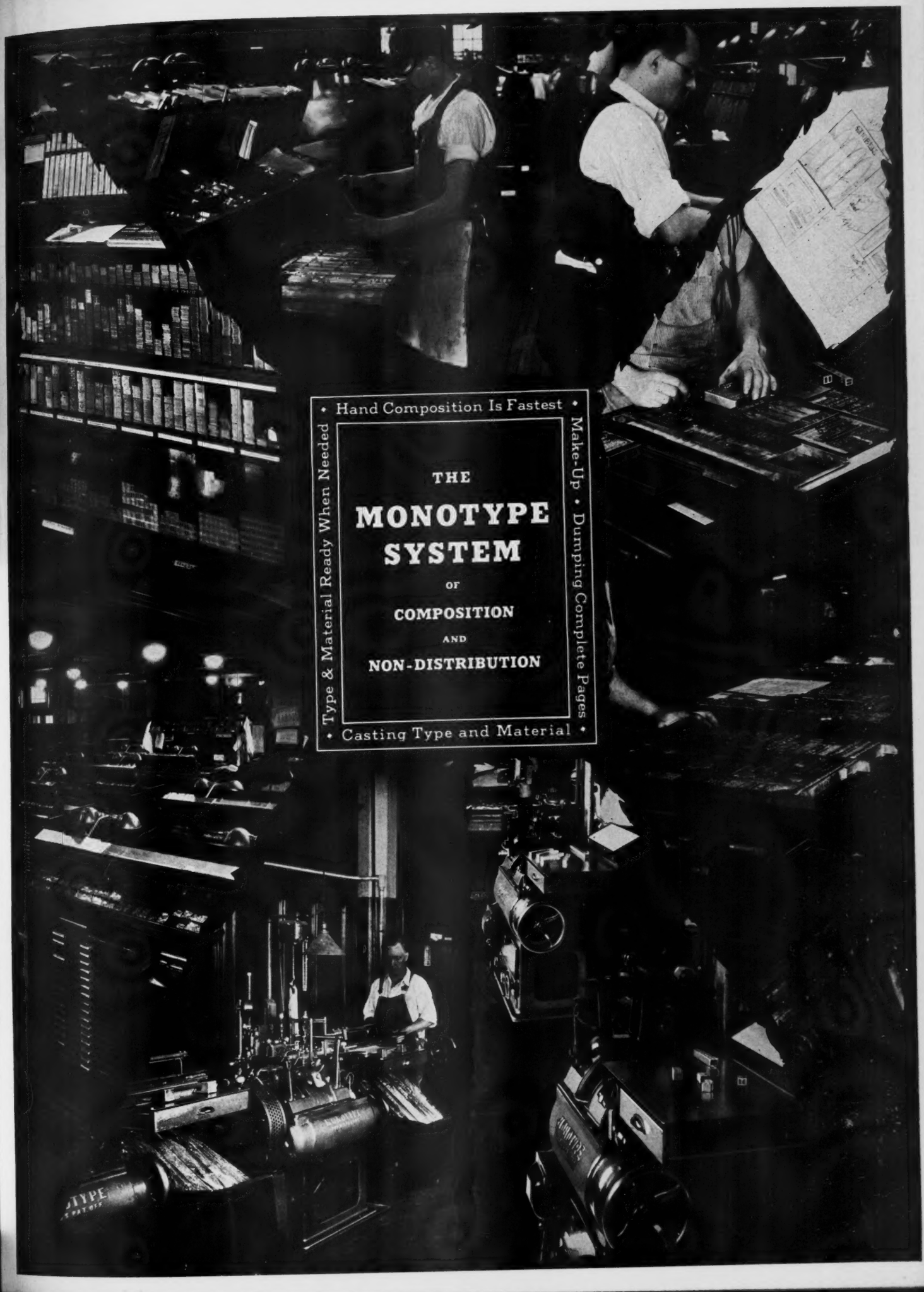
Angle Gauge—Angle setting from 2 to 88 degrees. Wider range than any similar gauge.

Balanced saw arbor for fast operation. *Exclusive with C&G.*

C&G Saw Trimmers have longer life with minimum upkeep. Proof of this is evidenced by the few C&G Saws on the resale market.

MILWAUKEE SAW TRIMMER CORPORATION

619 EAST CLYBOURN STREET MILWAUKEE, WISCONSIN


• Hand Composition Is Fastest •
THE
MONOTYPE
SYSTEM
OF
COMPOSITION
AND
NON-DISTRIBUTION
• Type & Material Ready When Needed •
• Make-Up • Dumping Complete Pages •
• Casting Type and Material •

EDES ZINC

that word

"SUPERFINE"

The Edes Zinc trade mark bears the words "SUPERFINE QUALITY" —quality based on 90 years' experience and high skill perfected through modern manufacturing processes. Edes was the first manufacturer to produce a zinc satisfactory for photo-engraving purposes. Edes maintains its leadership by constantly improving its products to meet demands for better—more economical—metal.

Edes Regular is unsurpassed for all 'round newspaper and commercial work. Within the last year Edes introduced two new alloys—Edes Hard Matrix and TRIPLEMETAL—rapidly establishing themselves in newspaper plants throughout the nation.

HARD MATRIX ZINC

A new, improved product developed by Edes that silenced skeptics. Edes Hard Matrix is recommended for multiple matrix work. All the superior qualities of Edes Regular Zinc—plus extreme toughness.

TRIPLEMETAL

Tomorrow's photo-engraving metal today! The choice of many leading dailies for special work —Process plates—Ben Day color—signature cuts—standing heads—and full page layouts. TRIPLEMETAL—practically the equivalent of copper at approximately half the price.

AVAILABLE WITH KROMBAK COATING

THE EDES MANUFACTURING COMPANY

PLYMOUTH, MASS., U. S. A.

Headquarters for Superior Brand Copper and Plymouth Brand Brass

AUTHORIZED REPRESENTATIVES

CHICAGO: Chemco Photoproducts Co.
NEW ORLEANS: Chemco Photoproducts Co.
ST. LOUIS: Mid-West Photo Eng. Supply Co.
WASHINGTON, D. C.: E. H. Walker Supply Co.

BOSTON: Allan B. Croke Co.
BUFFALO: C. S. Illingworth
DETROIT: Eaton-Clark Co.
AKRON: Metzger Photo Supply Co.

CINCINNATI: G. C. Dom Supply Co.
SAN FRANCISCO: Selby Mohr
ATLANTA: Lamar-Rankin Co.

(DENVER MINNEAPOLIS TULSA WICHITA MEMPHIS DALLAS
OMAHA KANSAS CITY OKLAHOMA CITY DES MOINES HOUSTON SAN ANTONIO) Thompson-Hayward Chem. Co.

ink

that established a new standard
for fine newspaper printing

constantly improved—a step ahead
of every new mechanical demand

and today—stronger, more
economical and better than ever

ARROWHEAD BLACK AND COLORS

a proven grade for every make
and speed of press equipment

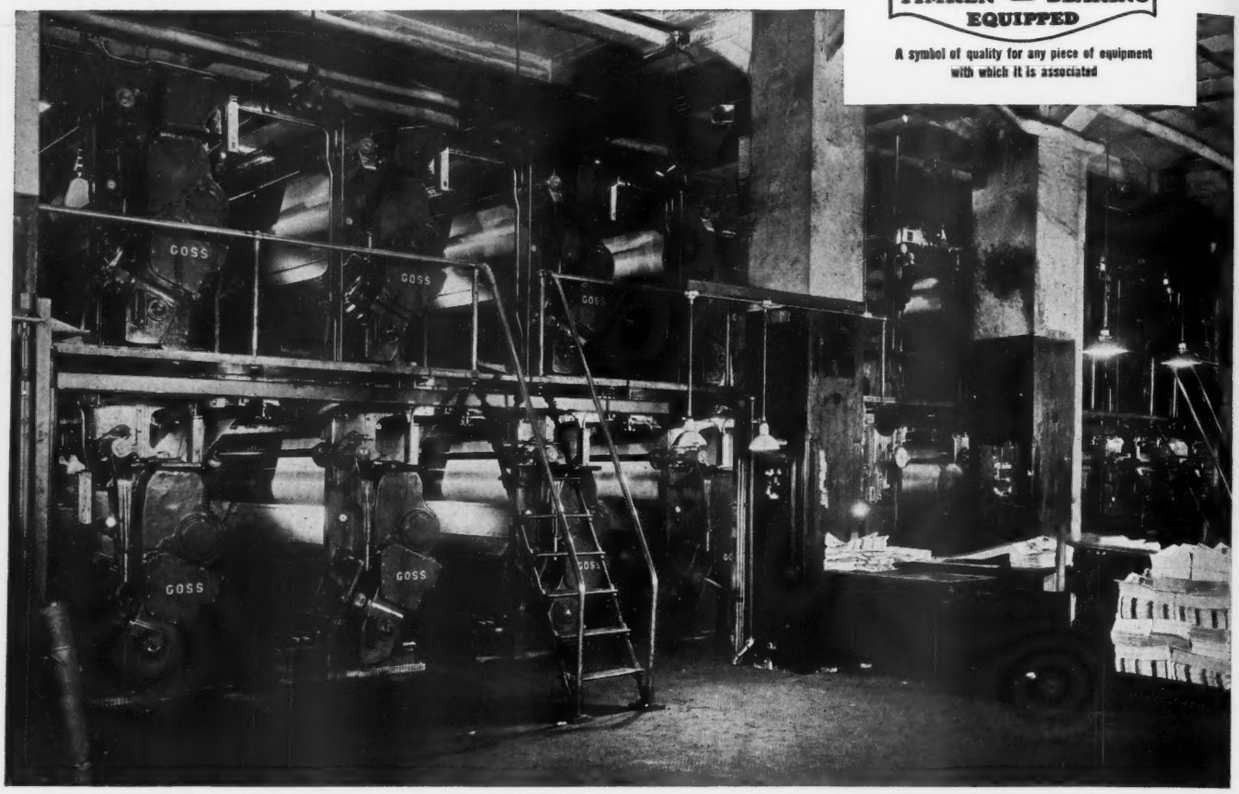
Howard Flint Ink Company

DETROIT • NEW ORLEANS • HOUSTON
DENVER • INDIANAPOLIS • CHICAGO

Timken Bearing Equipped 16 unit Goss Multi-Color Press installed at the plant of the Chicago Tribune.

Tapered Roller TIMKEN BEARING EQUIPPED

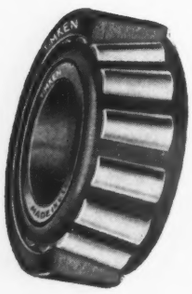
A symbol of quality for any piece of equipment with which it is associated



TIMKEN Bearings Promote Speed And Accuracy In This New Goss Multi-Color Press

High-speed multi-color printing on rotary web presses presents an extremely difficult problem from the standpoint of precision. It demands perfect coordination of every moving part.

Prominent among the many design and constructional factors by means of which the Goss Printing Press Company obtains accurate register at high operating speeds is the use of TIMKEN Tapered Roller Bearings on all plate and impression cylinders.



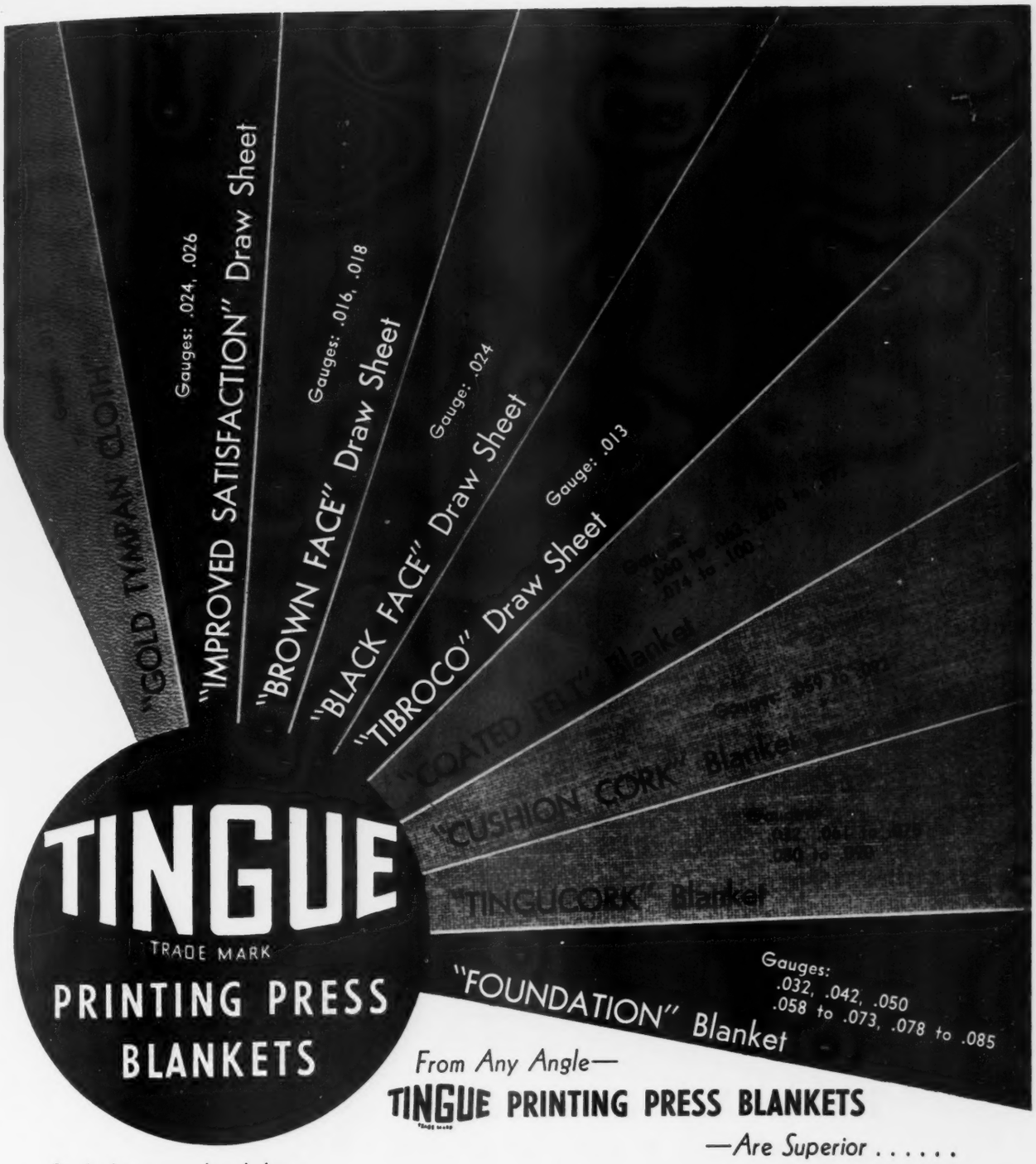
TIMKEN Bearings assure freedom from friction and wear; hold cylinders in correct and constant alignment; provide full protection against all loads—radial, thrust or both together in any combination; and greatly simplify lubrication.

More and more printing presses of all kinds are going on TIMKEN Bearings in response to the urgent necessity of speed with quality. Are *you* using them?

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN

TAPERED ROLLER BEARINGS



From Any Angle—

TINGUE PRINTING PRESS BLANKETS

—Are Superior . . . . . .

Stocked in gauges listed above
Special gauges made to your requirements

TINGUE, BROWN & CO.

114-120 East 23rd St. NEW YORK, N. Y.
1227 Wabash Ave. CHICAGO, ILL.
723 East Washington Blvd. LOS ANGELES, CAL.

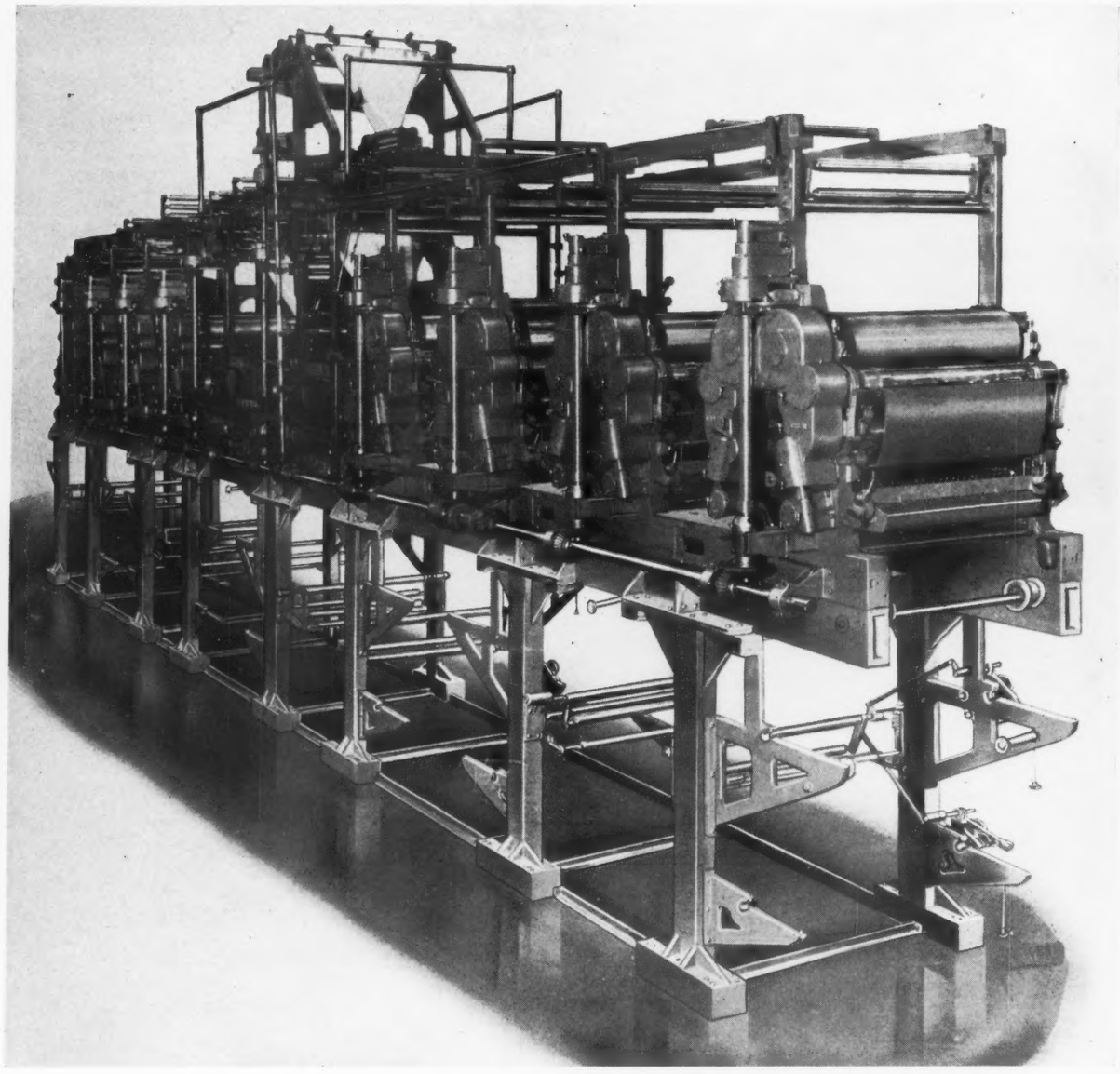
Canadian Sales Agents: ROSS WHITEHEAD & CO., LTD., Montreal, Canada

THE "HINDU"

MADRAS, INDIA

Will Soon Install This 32 Page

DUPLEX UNITUBULAR



This photograph taken on our erecting floor showing press being tested. Some of its features: High Speed Operation—All Page Combinations by Two's—Underneath Paper Feed with Provision for Magazine Reels—Removable-Interchangeable Ink Fountains—Quick Plate Lock-Up—Double Folders and Balloon Former—Anti-Friction Bearings—Forged Steel Plate Cylinders and many other modern engineering principles.

THE DUPLEX PRINTING PRESS CO.

BATTLE CREEK, MICHIGAN

Let Klean-O-Mat Reduce Your Costs, Too

Model L—For Large Plants

—As it has for these most recent newcomers to the Klean-O-Mat family

Journal of Commerce, New York
Syracuse (N. Y.) Post-Standard
Chilton Company, Philadelphia
Kalamazoo (Mich.) Gazette
Chester (Pa.) Times
Saginaw (Mich.) News
Bay City (Mich.) Times
Johnson & Harden, Cincinnati
Lancaster Press, Lancaster, Pa.
Brantford (Ontario) Expositor
Cortland (N. Y.) Standard
Nashua (N. H.) Telegraph

Check These Klean-O-Mat Benefits Each One A Bulls-eye

- Magazines and mats cleaned perfectly—without running out the mats.
- Keyboard cams, escapements, channel entrances cleaned, too—ALL ASSEMBLED.
- Cleaning problems simplified. Cleaning time and costs reduced.
- Errors greatly reduced—by preventing them AT THEIR SOURCE.
- Visability of reference marks for the operator.
- Perfect alignment—metal-tight lock-up.
- "Railroading" with assurance.
- A Klean-O-Mat Machine model for every size of plant.

Model H—For Smallest Plants

Model M—For Medium-Sized Plants

KLEAN-O-MAT CORPORATION

30 Rockefeller Plaza . . New York, City, U. S. A.

A Laboratory Product

BURGESS Chrome MATS

All during the A. N. P. A. Mechanical Convention you'll find the Welcome sign hanging out at our suite in the Benjamin Franklin Hotel. Lots of things can happen in the course of a year and it's good business to get together and find out what the other fellow is doing. So, whether you want to talk shop or just renew acquaintance and visit, come on up. You'll meet a lot of folks who talk your language and it's dollars to doughnuts you'll pick up some ideas that'll be of value to you.

•

BURGESS
CELLULOSE COMPANY

Manufacturers of Burgess Chrome and Tone Tex Mats

FREEPORT ILLINOIS

202

For Better Production...

"FLECTO"
GUMMED PACKING FELT

"Flecto" gummed packing felt is successfully used on all types of dry mats.

- ALL GAUGES ARE UNIFORM
- EASY TO TEAR
- DOES NOT SLIP

Gauges .025, .030 and .035—Sheets 18 in. by 24 in. and gauges .040, .045 and .050—Sheets 18 in. by 22 in. Cut into strips without charge.

Write for free samples.
Special discounts on quantity orders.

• •

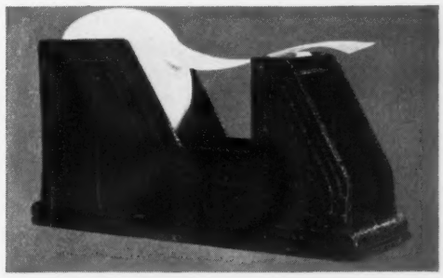
These are three of Eastern's many outstanding values in Stereotype, Composing and Pressroom Supplies

Order from Eastern Newspaper Supply or any of the following distributors:

Burgess Cellulose Company.....Freeport, Ill.
Certified Dry Mat Corporation.....New York, N. Y.
Wood Flong Corporation.....Hoosick Falls, N. Y.
R. Hoe & Co., Inc.....New York, N. Y.
Geo. Russell Reed, Jr.....San Francisco, Calif.
Flexideal Dry Mat Co.....New York, N. Y.
Ralph Leber Company.....Seattle, Wash.
Russell Products Company.....Philadelphia, Pa.
Coyne & Paddock, Inc.....Long Island City, N. Y.
Western Newspaper Union.....All Local Branches

In Canada
W. E. Booth Co., Ltd..Toronto, O., and Montreal, Q.
Bennet Dry Mat Co., Ltd....Chambly Canton, Que.

"PLATE-TAK"
CUT MOUNTING TAPE



NOW IN THE NEW DISPENSER

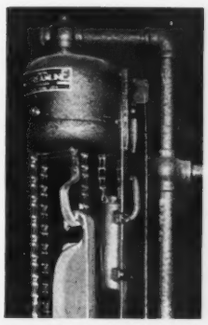
No tacks. No cement to squeeze out. Simply lay a strip of this super-thin tape under the cut; press down by hand, and the cut is there to stay. When through, the tape strips off, leaving clean surfaces on both cut and base.

The new dispenser brings still more speed, convenience and economy to your cut-mounting.

Free Samples on Request

• •

STREAM-LINE FEEDER



- Will not slip.
- No overlaps.
- Worm feed drive.
- Most dependable.

Designed and manufactured exclusively for typesetting and type casting machines.

Now in use in the composing rooms of the country's foremost dailies and giving the utmost satisfaction.

Being controlled by a governor that operates in unison with the cycle of the caster, there is no danger of "overflowing" or "running dry."

• • • • •

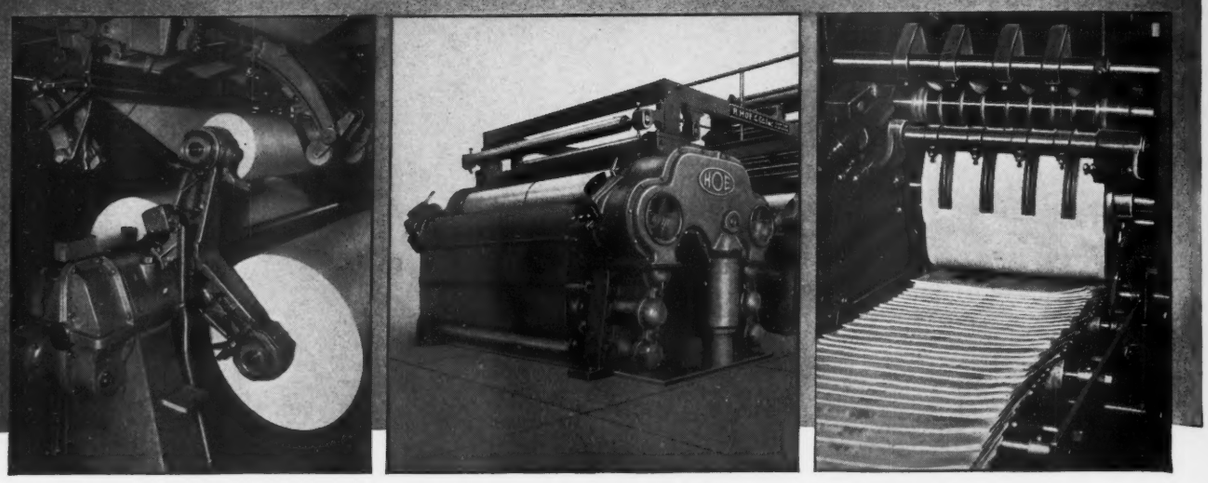
SEND FOR OUR LATEST CATALOG

Eastern Newspaper Supply

9603 NORTHERN BLVD. **CORONA, NEW YORK**

For the mechanical man HOE is TOPS!

PAPER PRINTING FOLDING



The opinion of the mechanical man is overwhelmingly in favor of Hoe Equipment. Otherwise, he wouldn't have endorsed the many purchases of recent years which have totaled several hundreds of Hoe units and placed Hoe first in pressroom popularity by a wide margin.

There are abundant reasons. The mechanical man appreciates the production capacity of the Hoe Super-Production Newspaper Press. He is pleased with smooth running operation at high speeds. He favors short web leads. He likes accurate ink control. He knows what the crankshaft drive system does for ink distribution. All these and more he finds on the Hoe Super-Production Newspaper Press.

When he watches his men at work, the mechanical man sees ample space between his Hoe units. He recognizes many features that promote operating safety. He knows the advantages of instantaneous plate lock-up, micrometer impression adjustment, web feeding-in pans and convenient roller removal.

From his Super-Production Folder he obtains an orderly laydown of finished papers and is glad that all necessary adjustments are accessible outside the operating mechanism.

His electrically-controlled and automatic Hoe Tensions give him complete control of the fast-travelling newsprint. When roll changes are made, he admires the simplicity of the Hoe Full-Speed Paster.

Reasons enough . . . why Hoe is "tops" with the mechanical man. There are other reasons and we would appreciate a chance to demonstrate them for any forward-looking mechanical man.

HOE HEADQUARTERS AT THE ANPA · MECHANICAL CONFERENCE · ROOM 455 · BEN FRANKLIN HOTEL

R. HOE & CO., Inc.

General Offices: 910 E. 138th St. *(At East River)* New York, N. Y.

BOSTON SAN FRANCISCO CHICAGO BIRMINGHAM

Merle Oberon

Courtesy The Detroit Free Press

Beauty in Color

Flint Inks

The easiest and least expensive way to improve your magazine and comic sections is to use these really better inks

Arrowhead Black and Colors

Here is a splendid example of a good newspaper advertisement made still better by adding color. Arrowhead Colors on daily editions perform perfectly at any speed.

Courtesy H. J. Heinz Co. and Maxon, Incorporated

Every Flint Ink

57
GUARANTEED P
J.HEINZ COM
MADE FROM FRESH RIPE TOMATOES. SPICES. GRANULATED SUGAR. DISTILLED VINEGAR. ONIONS AND SALT.
FREE FROM ALL ARTIFICIAL PRESERVATIVES AND COLORING MATTER
H.J. HEINZ COMPANY
HEINZ
EST'D 1869
TOMATO KETCHUP
HEINZ
57
PURE FOOD PROD
MADE BY
H.J. HEINZ COMP
57
Send for our Color Selector showing complete range of Arrowhead Colors. Strong and brilliant, these truly better inks will help you produce beautiful results.

This is Arrowhead Red No. F-9255

k is a Good Ink

This insert was printed with the approved A. N. P. A. shades of Arrowhead Colors

Howard Flint Ink Company

DETROIT CHICAGO NEW ORLEANS HOUSTON DENVER INDIANAPOLIS

BOOTH'S ZINK CUT CEMENT IS BEST USED SPARINGLY. AFTER APPLYING THE CEMENT, PLACE CUT ON ITS BASE, AND ROTATE THE CUT SLIGHTLY WHILE PRESSING DOWN WITH FINGERS.

30% FASTER CUT MOUNTING

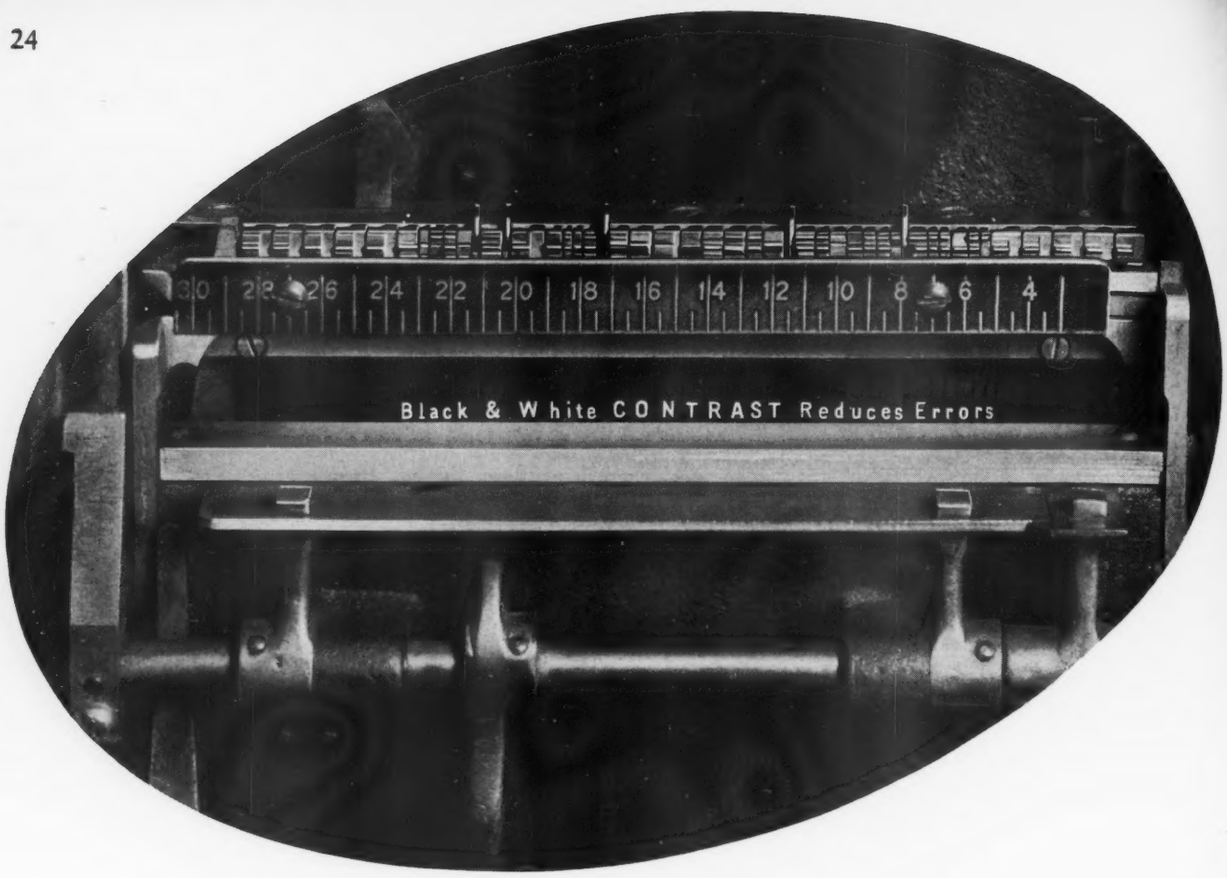
The E. A. Booth Rubber Company is pleased to announce to production and mechanical executives that Booth's Zink Cut Cement has been improved by shortening the setting time of the cement approximately 30%. This change has been accomplished without in any way impairing its valuable adhesive qualities. Booth's Zink Cut Cement is used for fastening zinc, copper and plastic cuts, electros, stereos and shell casts to wood or metal base. This cement does not deform the cut in any way, but on the contrary, preserves true printing levels.

Now—Rubber Keyboard Rolls

For Linotypes and Intertypes. In addition to the dependable Green Rubber Roll for Linotype keyboards, we now announce a roll of special diameter and length for Intertype keyboard shafts. Intertype rubber rolls are ¼ inch longer than those supplied by us for Linotypes. The Intertype rolls, when applied properly to the rubber roll shafts will caliper 1 inch. In placing your order for Booth's Green Rubber Keyboard Rolls please specify for which machine they are to be used. We'll fill your order promptly and accurately.

E. A. BOOTH RUBBER CO.

364 Rockefeller Building **Cleveland, Ohio**



Why MATRIX CONTRAST SERVICE *pays big dividends*

BLACK & WHITE Matrix Contrast Service makes lines of Linotype and Intertype matrices readable at a glance. As a result, the operator notices and corrects typographical errors before "sending in" his lines. Correcting errors before lines are cast saves time of operators setting corrections, saves time of floormen inserting new slugs, and saves time in the pulling and handling of revise proofs. In addition to saving time, Matrix Contrast reduces eye-fatigue, conserves energy, and promotes increased production and lower costs. The service can be installed on a "pay-as-you-profit" basis. Write for detailed information; and please state how many line composing machines you are using.

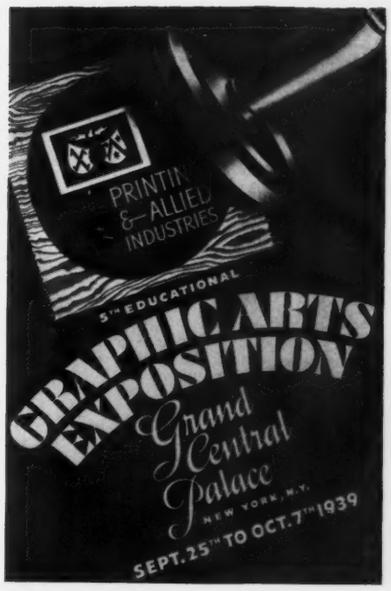
MATRIX CONTRAST CORPORATION

Sole Licensees of the Percy L. Hill Matrix Contrast Patents Nos. 1,466,437 and 1,796,023

EMPIRE STATE BUILDING, NEW YORK

European Agents: Fuditor, Ltd., 3, Woodbridge Street, Cleckenwell Green, London, E. C. 1

Black & White MATRIX CONTRAST SERVICE



Executives:

The Graphic Arts Exposition is being organized, not only for proprietors and business executives, but it is being held especially for you who are in intimate contact with printing production. The latest developments in printing equipment and supplies will be exhibited. In so many cases, your boss will delegate yourself as his representative to visit the big show and report back to him. Now if he has not thought of it already, perhaps a diplomatic suggestion by you will turn the trick.

The ANPA Program

THIS year's A.N.P.A. Mechanical Conference program has been streamlined so that a number of departmental meetings for each of the major mechanical departments of the newspaper plant provide ample opportunity for production and mechanical executives themselves to participate in the prepared subjects for the meetings. Among the trade associations, the A.N.P.A. Mechanical Conference pioneered in placing this type of meeting, or clinic, on its program. It remains the superior means for inducing executives to get up on their feet and discuss orally printing production techniques among fellows of their own sort.

Following the Burke Rochester plan, abstracts of the discussions at each of the meetings are prepared for presentation to the general conference meeting on the next day. In this manner, all executives attending the conference have an opportunity to hear a digest of each meeting even though he couldn't attend more than the one meeting in which he is most interested. The delay in presenting the briefed proceedings of each clinic until the general meeting on the following day overcomes any objections that time enough is not provided for doing the abstracting intelligently or because time enough has not been allowed for the task.

In commenting upon the program, it is not our purpose to detract in any way from the speakers scheduled to appear at the general sessions. There is so much to be said, however, for the program arrangements which encourage printing plant executives to talk openly at departmental meetings when past experience demonstrates that they will not do so freely in the general meetings.

The program consisting of Photographic and Technical subjects and the Ayer Advertising Agency Campaign demonstration should be exceedingly informative to those attending the Conference.

(*Continued on Next Page*)

ANPA Program

(Continued from Page 25)

Monday, 10 A. M.—Ballroom

OPENING ADDRESS—*Robert McLean, President, Philadelphia* Bulletin.

NEWSPRINT QUESTION BOX—*W. G. MacNaughton, Engineer, News Print Service Bureau.*

ASSISTANCE TO NEWSPAPER MECHANICAL DEPARTMENTS—*Dr. Mark Ellingson, President, Rochester Athenaeum and Mechanics Institute.*

Monday, 2 P. M.

FOUR DEPARTMENTAL MEETINGS

Composing Room—Ballroom, Hotel
Stereotypers—Betsy Ross Room, Hotel
Pressmen—Second Floor, Edison Building, 9th and Sansom Streets
Engravers—Ballroom Foyer, Hotel.

RETOUCHING OF PHOTOGRAPHIC COPY—*Frank Onken, Chief Artist, Baltimore* Evening Sun.

Extra Session—Monday, 8:00 P. M.—Ballroom

Intertype Corporation will show a film entitled INTERTYPE STEPS AHEAD WITH BETTER SLUGS. This shows the operation of the new baffle crucible, designed to eliminate air from slugs.

F. W. Hochstetter, of Pittsburgh, will talk about his process of reclaiming waste paper.

The Newsprint Question Box will be continued at this session, if not completed in the morning.

Tuesday, 9:30 A. M.—Ballroom

NEWS PHOTOS AND THEIR REPRODUCTION—*William C. Eckenberg, Staff Photographer, Rotogravure Picture Section, New York* Times.

PREPARATION OF A NEWSPAPER ADVERTISING CAMPAIGN—*N. W. Ayer & Son.*

DISCUSSION—AGENCY PROBLEMS.

Tuesday Afternoon

INSPECTION TRIPS

Lanston Monotype Machine Co.
Curtis Publishing Co.
Franklin Institute Museum
Imperial Type Metal Co.

The Lanston Monotype Machine Company will serve lunch at its plant, 24th and Locust Sts., about 15 minutes from hotel. Trip through plant will occupy about 1½ hrs. Add 30 minutes for lunch.

Tuesday, 8 P. M.—Ballroom

ENGRAVERS' ZINC—*W. H. Finkeldey, Consultant, Edes Mfg. Co.*

REPORTS FROM DEPARTMENTAL MEETINGS—*Composing Room and Photo-engraving Department.*

Wednesday, 9:30 A. M.—Ballroom

NEW LIGHT SOURCES FOR PHOTO-ENGRAVING AND PHOTOGRAPHY—*R. E. Farnham, Commercial Engineer, General Electric Company.*

REPORTS FROM DEPARTMENTAL MEETINGS—*Stereotype Room and Pressroom.*

DISCUSSION—FIRST IMPRESSION PRINTING.

Wednesday, 2 P. M.—Ballroom

OFFSET PRINTING AND THE NEWSPAPER—*Thomas E. Dunwody, Editor,* American Pressman.

AN AGENCY MAN LOOKS AT ROTOGRAVURE—*V. Winfield Challenger, Director of Printing, N. W. Ayer & Son.*

DISCUSSION—ROTOGRAVURE TOPICS.

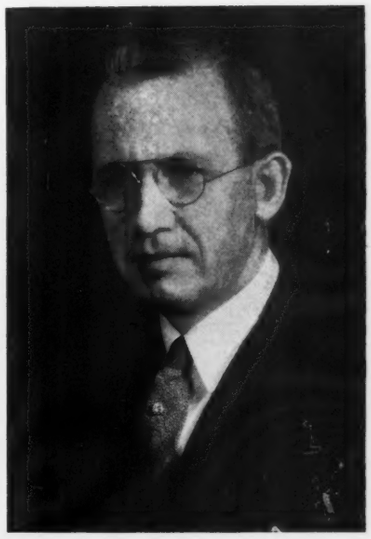
Some of the Speakers on the Philadelphia A.N.P.A. Mechanical Conference Program

W. E. Wines, Manager, A.N.P.A. Mechanical Department now in his thirteenth year in that capacity.

"New Light Sources for Photo-engraving and Photography" is the topic of R. E. Farnham, General Electric Company's Commercial Engineer.

Dr. Mark Ellingson, President, Rochester Athenaeum and Mechanics Institute discusses "Assistance to Newspaper Mechanical Departments."

W. H. Finkeldey, Consultant, Edes Manufacturing Company, prepared a discussion on "Engravers' Zinc."



V. Winfield Challenger, Director of Printing, N. W. Ayer & Son, Philadelphia, tells how "An Agency Man Looks at Rotogravure."

Frank Onken, Chief Artist, Baltimore Evening Sun, *presents "Retouching of Photographic Copy."*

William C. Eckenberg, Staff Photographer, Rotogravure Picture Section, New York Times. *His topic is "News Photos and Their Reproduction."*

Editor Thomas E. Dunwody, of the American Pressman, *discusses "Offset Printing and the Newspaper." (Wednesday Afternoon's Session).*

Word Exhibit

Brief descriptions of the real printing equipment and supplies exhibits at A.N.P.A. Mechanical Conference brought to you in Printing Equipment Engineer.

WHILE it is not possible to print descriptions of all of the displays at the Philadelphia A.N.P.A. Mechanical Conference, *Printing* EQUIPMENT *Engineer* brings you briefly worded descriptions of most of the exhibits presented to visiting production and mechanical executives. Latest developments in equipment and supplies for producing newspapers are proudly shown.

In addition to the exhibitors taking display space, many manufacturers have in attendance at the Conference one or more representatives who are interested in better newspaper printing. Besides the main purpose of the Conference, which of course, is to discuss newspaper production and methods by and between experts for the mutual interests of all mechanical executives, the displays not only stimulate interest in the main Conference program, but serve to remind newspaper executives of the dangers of obsolescence. Just remember, there is an obsolescence of method as well as of machinery. Don't let either one catch up with you!

E. A. Booth Rubber Company

At its booth for the Philadelphia A.N.P.A. Mechanical Conference The E. A. Booth Rubber Company displays and demonstrates Booth's Zink Cut Cement and Booth's Green Rubber Keyboard Rolls for Linotype and Intertype machines. Recently the Booth Company announced a shortening of 30% in the drying time of the cement. E. A. Booth announces a new Rubber Keyboard Roll especially made for Intertype composing machines.

In attendance to greet mechanical executives and newspaper representatives are E. A. Booth and R. C. Booth.

Albert R. Bourges Service

At the Albert R. Bourges Service special exhibit space, Mr. Bourges himself is greeting production and mechanical executives. He is demonstrating the use of fountain pens and opaque inks for reducing time on spotting, outlining and opaquing negatives and for advantages of using this combination for continual use on transparent masks and how the acetate sheet is held automatically in contact with the copy.

Bridgeport Engravers Supply Company

Bridgeport Engravers Supply Company, manufacturers of photo-engraving zinc and copper and rotogravure copper are exhibiting its metal plates for newspaper illustrative reproduction.

Chemco Photoproducts Company

Large panels on which are mounted reproductions of work done by various newspaper users of Chemco Cameras are featured in the exhibit of Chemco Photoproducts Company.

Among those attending as representatives of the Chemco Photoproducts Company are: Vice President H. E. Eddy and Chicago Manager W. W. Warfel.

Eastern Newspaper Supply

Eastern gummed packing felt, cork molding blankets, molding creepers, Plate-tak cut-mounting tape, molding boards, general stereotype supplies and Streamline metal feeder are being exhibited by Eastern Newspaper Supply.

General Manager Edgar A. Mills, Jr., and Arthur W. Gibson are greeting production and mechanical executives.

Eastman Kodak Company

The Eastman Kodak Company is exhibiting Kodalith Stripping Film for making line and halftone negatives. Also shown are newspaper magazines and supplements carrying reproductions in four colors from Kodachrome transparencies. Supplements are printed both by letterpress and by rotogravure.

Those in attendance are: Victor W. Hurst, John McMaster, Alexander Clair, William Falconer, James E. Whiteley, Jr., William E. Brown.

Federated Metals Division (American Smelting and Refining Co.)

Federated Metals Division of American Smelting and Refining Company is exhibiting a large picture of its new Whiting, Ind., plant. Also displayed are stereotype metal and stereotype plates, Linotype and Monotype metal all cast from Processed Federated Type Metal Alloys.

Those in attendance are: Vincent J. Ryan, J. J. Moran, Tom Hammer, M. Levy, Metallurgist Herman Smith, J. Kennedy and Ralph Raphael.

Arthur H. Gaebel

Arthur H. Gaebel, manufacturer of newspaper photo-engraving equipment, is exhibiting several of its equipment items for the photo-engraver. Mr. Gaebel announced recently an automatic dryer for photo-prints.

Hammond Machinery Builders, Inc.

Hammond Machinery Builders, Inc., exhibits several models of composing room saws. In addition to the saw equipment a Hammond automatic locking, flat caster with 800 lb., valve-controlled melting pot and a Radial Router with straight line feature are shown.

Vice President Lee Hammond and Eastern Manager W. J. Holtmeier demonstrate equipment and greet executives visiting the Hammond Machinery Builders' booth.

Imperial Type Metal Company

Imperial Type Metal Company exhibits Imperial Type Metals in the form of plates and type as well as the bars of metal in original form. In addition, the company shows photo-engraving zinc plates, slotted eye metal ingots and water-cooled slotted eye ingot mold for use with cold metal feeders on composing machines.

The following representatives are on hand: Wilson S. Yerger, William H. Pollock, William A. Penney, Joseph M. Fant, Lewis S. Somers, William C. Otter, Charles Olton, Vincent L. Kirkland, Claude Purkis, Grant F. Wilber, William W. Stearly, Harry A. Bray, Clarence Seaman.

Intertype Corporation

Intertype Corporation is exhibiting and demonstrating with actual models the Intertype automatic quadding and centering device, the recently developed pot crucible baffled mouthpiece, 6-mold disk with automatic ejector blade selector and a mixer distributor mechanism. Intertype is also showing its new technicolor moving picture of the baffled pot mouthpiece.

In attendance at the Conference are T. A. McElwee, Don E. Roseman, Amos G. Hoffman, Frank Giles, Herman Freund and A. T. Mann, Jr.

Klean-O-Mat Corporation

Representatives of Klean-O-Mat Corporation explain and demonstrate several models of Klean-O-Mat Machines. Models L and M, both motor-operated, and the Model H hand-operated machine are exhibited. These models cover requirements of different size composing rooms. Two composing machine magazines—one typically dirty, and one cleaned by the company's process, are shown. The Loose Mat Cleaner is shown to demonstrate how loose fonts, sorts or Ludlow matrices can be cleaned.

Lake Erie Stereotype Equipment Corporation

In addition to what C. S. Davis, Jr., of Lake Erie Stereotype Equipment Corporation, is pleased to call the company's "headquarters booth" on the exhibit floor, the company has a working display consisting of a Directomat Hydraulic Matrix Molding Press on the ground floor of the Sheridan Building directly opposite the Sansom Street entrance of headquarters Hotel Benjamin Franklin. The press is of a model intended primarily for cold molding of black and white wotk, but is equipped to permit hot molding and drying of color work and similar jobs. Mill-conditioned mats and various types of forms are provided for molding on the press. The forms consist of open forms, mixed pages, solid pages, and so on.

Linograph Corporation

On display at the Conference is a Model 50 Linograph, which is being demonstrated to show the Linograph method of handling straight or large display composition from the same machine.

Those in attendance are: General Manager C. E. Murray, Sales Manager Harry Horn, and Sales Representatives Herman Hiatt and Burt S. Burdett.

Linotype Parts Company

Linotype Parts Company exhibits parts for composing machines. The Duex Spaceband Cleaner is being demonstrated.

Members representing the firm are I. Bendow, Emil Bendow, Frank Swenson, Carl M. Keltner and Homer E. Dunn.

Ludlow Typograph Company

Latest models of Ludlow and Elrod equipments are being exhibited by Ludlow Typograph Company. Also shown is the company's new Shell-hi Slug Shear.

In attendance are Fred H. Dunham, John O. King, W. F. Mulcahy and Clay A. Wellman.

Master Etching Machine Company

Officials of the Master Etching Machine Company exhibit a miniature "Master" Photo-engraving Plant, each item of equipment in actual operation. Full size Master Etching Machines and other equipment items also are exhibited.

Messrs. O. T. Plesser and William Guenst are in charge of the exhibit.

Matrix Contrast Corporation

The display of the Matrix Contrast Corporation consists mainly of the showing of its natural color moving picture entitled "The Story of Black and White Matrix Contrast Service." In addition, a line-composing machine assembler containing some unprocessed matrices as well as some Black and White Matrices, are shown to illustrate the difference between the processed and unprocessed matrices.

Those in attendance at the Conference are: Lon S. Landers, Clifford Yewdall, Charles H. Stout, Gerald W. Hunter and Richard M. Seymour.

Mergenthaler Linotype Company

The booth of the Mergenthaler Linotype Company is given over to exhibition of Linotype products.

Milwaukee Saw Trimmer Corporation

The Milwaukee Saw Trimmer Corporation's booth features three models of composing room Saw Trimmers. At this time the company announces and exhibits a new streamlined low-priced model which has been christened the C&G Sawliner.

President George F. Morrison and demonstrator Erwin Arpe of Philadelphia attend the booth.

Geo. H. Morrill Company

L. R. Shupe, Philadelphia district, Frank S. Barr, Chicago district, and R. S. Crowell of the New York district of Geo. H. Morrill Company represent the company at the Conference. Dayco Synthetic and Rubber Rollers are exhibited.

Partlow Corporation

Partlow Corporation, New Hartford, N. Y., is exhibiting its line of gas and electric temperature controls for maintaining temperatures of printing metals. Working exhibit shows how control functions.

Harold M. Pitman Company

The booth of the Harold M. Pitman Company features displays illustrating the Gibson Metallic Underlay, the Scherer Rolup Process and a Pitman Vacuum Printing Frame, as well as other equipment items. Representatives of the Pitman Company are prepared to explain the processes to interested executives.

Messrs. John Storck and Louis Weber of the Pitman Eastern Office are in attendance.

Printing EQUIPMENT Engineer

Printing Equipment Engineer's booth (No. 11) is being used as a distributing point for de luxe copies of the June issue. A neon sign helps you identify the booth.

Representing *Printing* EQUIPMENT *Engineer* are W. D. Will, Russ Birchfield and Mac Sinclair.

Rapid Roller Company

A full line of Mercury rollers for magazine and newspaper printing presses are on display at the booth of the Rapid Roller Company. A pictorial review showing the various progressive steps in the manufacture of both rubber and synthetic rollers is an additional feature.

The following representatives from the Rapid Roller Company are in attendance at the Conference: D. D. Kallison, F. P. Peters, M. M. Taylor, T. M. Broadston, M. E. Hillison.

J. A. Richards Company

The J. A. Richards Company exhibits a Richards Clipper Cabinet Pedestal Saw-Trimmer, Radial Arm Router and a Do-More Speedster Saw-Trimmer.

Paul and Ralph Richards are here to greet mechanical executives and other visitors.

R. R. Robertson

R. R. Robertson displays a fully equipped camera, and a temperature control unit for controlling the temperature of the developer.

R. R. Robertson is in attendance.

Rolled Plate Metal Company

Rolled Plate Metal Company's display features a panel exhibit of its engravers' metals—Zomo Electric Zinc and A-Z Alloy for line, halftone and color work.

In attendance to greet production and mechanical executives are W. Roy Manny, Fred Dirkes and W. R. Comber.

H. B. Rouse & Co.

Rouse equipment for composing rooms consists of Rouse Band Saw, Cabinet Model Vertical Miterer, Economy Vertical Miterer and a Plate Mortiser.

President William J. Knoll, and Vice President Harry W. Knoll are demonstrating each Rouse equipment item.

Sta-Hi Corporation

Sta-Hi Corporation of Los Angeles exhibits two new pieces of stereotype equipment. These machines are the Sta-Hi Master Former, incorporating many improvements over the Sta-Hi Autoformer; and the Sta-Hi Routomatic, said to be a startling departure in curved stereotype plate routing equipment.

A. W. Cochran, president, Craig C. Baker, Secretary-Treasurer, and Don Richards, Chicago representative, are in attendance.

Stereotex Machinery Company

C. Fritschi, General Manager, Stereotex Machinery Company, announces his company is exhibiting a Stereotex Hydraulic Matrix Press for stereotyping, electrotyping and rubber plate production.

Tingue, Brown & Company

J. W. Foster, President of Tingue, Brown & Company, announces that a complete line of the company's press blankets is exhibited in Booth 47 at the Philadelphia Conference.

The following company representatives welcome visitors to the company's display: W. M. Tingue, G. G. Sanborn, R. H. Dunham, J. W. Foster.

United American Metals Company

The keynote of the United American Metals exhibit is its water-cooled mold for casting double-ear slip-off ingots for composing machine cold-metal feeders. Ingots are being cast and a remelt kettle is in operation to demonstrate the slip-off ear feature.

In attendance at the United American Metals display are Assistant to the President William H. Street, Vice President L. W. Goldberg, Earl L. Miller and Arthur Chambeau.

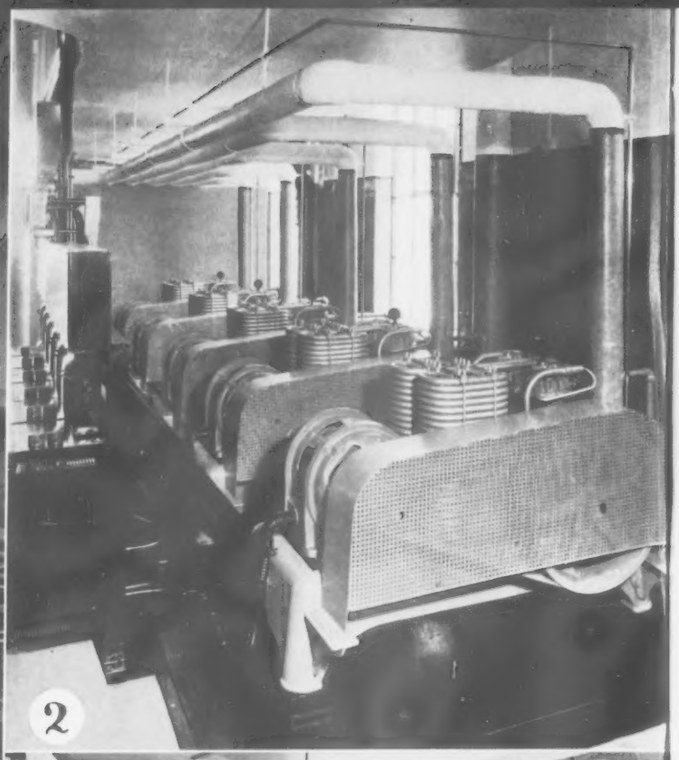
Vandercook & Sons

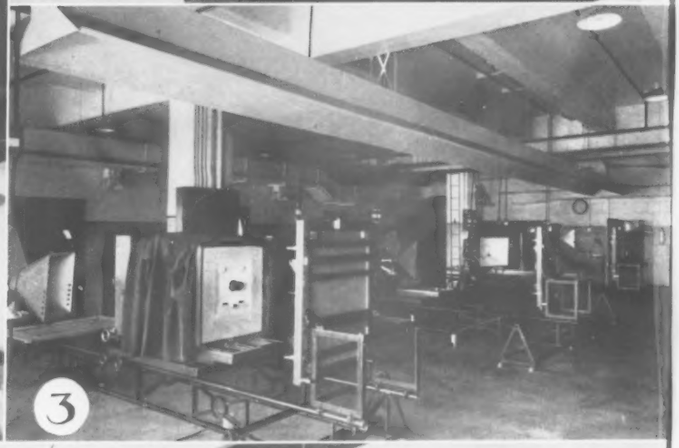
General Manager E. O. Vandercook of Vandercook & Sons announces two Proof Presses suitable for rapid proofing of straight matter and display composition are exhibited at the Vandercook booth. Equipment displays consist of No. 22 and 23 Electric Proof Presses. Exhibit display boards cover Vandercook equipment for producing transparent impressions.

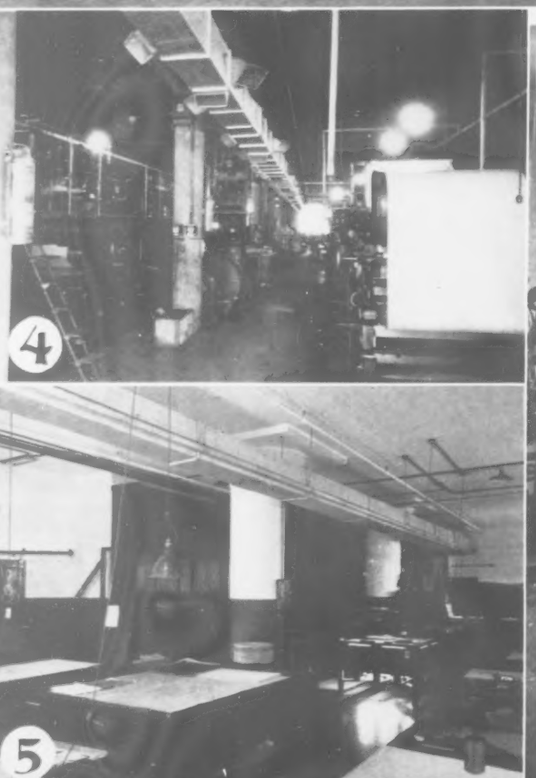
Company representatives are on hand to greet visiting executives and newspaper representatives.

Wallin Manufacturing Company

Gus Wallin, President of Wallin Manufacturing Company, exhibits in Booth No. 32 a rebuilt and modernized Miller Saw-Trimmer. Also showing for the first time a ball-bearing saw-trimmer table, Finger-Ti Lock Workholder and improved Extension Swivel Gauge.







Control

Of temperature and humidity in mechanical departments should be given same consideration as control of ink, stock and press.

By B. OFFEN*

SINCE the elements will always be with us, the effects of temperature and humidity will remain a permanent problem. Modern methods require definite control of all of the factors for economical production. Temperature and humidity control are being recognized in combination as an important link in any process where the materials handled are affected by atmospheric variations.

In practically all phases of the Graphic Arts, materials are used that are sensitive to temperature and humidity. Paper being the largest item, is a constant problem where variations of humidity exist. This takes in all types of stock from newsprint to highly coated sheets. The variation in the moisture content of paper has become such an important question that the U. S. Bureau of Standards and many laboratories have made exhaustive experiments to determine the extent of the variations. A number of complete reports have been issued by these authorities showing how important it is to maintain a constant amount of moisture in the paper. We are also familiar with the sensitivity of photographic materials to humidity variations. Here temperature is also important. One can enumerate many of the ingredients used in the photographic process that are so affected. Therefore, one can readily see that without the proper control, considerable loss of time and material will exist. Modern plants today are controlling these factors.

Air Conditions and Gravure Production

One of the arts requiring very accurate control of air conditions is rotogravure. The development of rotogravure has been phenomenal in the last seven years. Its volume and use in publications of all descriptions has made a definite impression. Further, one should not be surprised if rotogravure finds its way into the daily newspapers. The need for definite control of air conditions for ultimate production schedules is very evident when one considers the use of gravure for newspaper supplements and inserts in magazines. Requirements of delivery of a dated copy is most important, particularly where a close dead line is maintained. Yesterday's newspaper will not sell on the news stands. Air conditioning must be used in the processing to give the assurance that production will be maintained regardless of what the weather conditions are. The process is of such a nature and the materials used are so sensitive to variations in temperature and humidity that very accurate control must be maintained.

We will briefly review some of the departments in rotogravure processing which require air conditioning. This not only applies to rotogravure, but to many of the other photographic processes for offset and letterpress.

Photo Gallery and Dark Rooms

The Photo Gallery and the Dark Rooms comprise the first department. These two are closely connected and should carry the same condition of temperature and humidity. Further, the free handling of films and plates which are exposed in both departments makes it desirable to condition these rooms. The development solutions and the exposure of the wet or dry films and plates to the air can bring about objectionable conditions if proper control is not maintained. The use of dryers for plates and films requires accurate regulation of humidity with a reasonable temperature so that the drying can be maintained under favorable conditions without harming the surface of the film or plate. Here drying can be accomplished in anywhere from 10 to 45 minutes depending on the haste or need of the product. Unless speed is a factor, it is advisable to maintain the longer drying period at normal temperatures. This results in a better product and does not have a tendency to harden the surface of the film. If it is dried too fast and at too high a temperature, the surface hardens resulting in a non-uniform contraction of the materials. This results in a loss of detail and tone value.

Retouching and Layout

Retouching and layout rooms require very careful consideration. Here the need for accurate control of temperature and humidity is quite necessary. In the handling of plates, films, or other materials such as onion skin, it is necessary to maintain the stability of these materials so they do not change. This is especially true where color work is done. The films must be prepared so that they will retain all their predetermined dimensions so that when prints are laid down on the cylinders, the proper register will be maintained for each of the color cylinders. Further, in the retouching of the films, particularly when the temperature and humidity are not maintained, variations may occur which will throw the particular product out of register. This department has a tendency to be quite warm in view of the large amount of light used. The excessive heating of the product has a tendency to dry it out, especially when the materials are laid down on the tables where the forms are being made up.

Carbon Tissue Room

The Carbon Tissue Room is another department that is very important. This usually consists of two rooms, one for the sensitizing and developing, and the other for the carbon tissue drying. Carbon tissue consists of a gelatin coated transfer sheet which is sensitized in solutions controlled very accurately for temperatures. After the tissue is sensitized it is then set in a drying chamber for a period of approximately 1½ to 2 hours, depending upon the individual requirements. In this, very close control of temperature and humidity is necessary. If you do not have uniform drying, the tendency is for the sheet to dry at the edges, curl up, and draw the wet carbon tissue from the plate. This is likely to damage the surface and create bad spots which show up in the photographing qualities and ultimately in the etching. By the proper regulation of the temperature, humidity, and air circulation, the correct drying can be accomplished so that the sheet will dry uniformly over the entire surface. Also by regulating the drying time, one can control the density of the coating, its reaction to light, and its etching quality. If the humidity is too high and the drying time too long, the life of the tissue is lost.

Carbon Printing Room

After the carbon tissue has been dried, it is ready for use in the Carbon Printing Room. Here the carbon tissue is laid in a vacuum frame with a rotogravure screen, and the proper circulation of air around the frame is maintained so that the tissue will not become too warm and dry out. Also, the humidity here is accurately maintained because of the exposure of the tissue during the handling.

*B. Offen & Company, Air Conditioning Systems, Chicago, Ill.

Fig. 1—View in an air conditioned rotogravure pressroom showing Goss press. Note the fresh air supply near the ceiling. Vapor removal connections attached to the press convey all vapors, fumes, etc., out and away from the pressroom atmosphere.

Fig. 2—Rotogravure pressroom showing ventilation and air supply to the working aisles.

Fig. 3—Photo gallery in gravure plant. Note the air supply and the exhaust duct over the arc lamps which generate heat.

Fig. 4—Layout room in rotogravure printing plant. Air conditioned supply is equipped with deflectors.

Fig. 5—Here is shown a unit air conditioner which functions to humidify and cool the air in this pressroom. This type unit is ideally suited for paper storage rooms.

Fig. 6—Dehumidifying apparatus installation. This is a group arrangement for individual control of departments for economical operation.

Fig. 7.—View in an air conditioned rotogravure pressroom, showing Hoe press. Note the ventilating and drying hoods; also supply and exhaust for the room itself.

ALL PHOTOS IN THIS LAYOUT FURNISHED BY B. OFFEN & COMPANY, CHICAGO, ILL.

Transfer Room

The Transfer Room is a department where the photographed carbon tissue print is applied to the polished cylinder for etching. The individual prints must be carefully laid down on the cylinder in their proper positions. After they are laid down the necessary transfer work takes place which removes the body of the paper leaving the sensitized photographic gelatin coating on the cylinder. After a few preliminaries, the cylinder is then ready for etching. One can readily see here the need for very accurate control of temperature and humidity to be sure that the forms used for the color cylinder are accurately maintained in both dimensions and density.

Etching Department

The Etching Department is the final step in the processing work. This is the point at which all the good and bad work shows up, and it is necessary for the etcher to correct any variations in the processing.

After the gelatin has been allowed to dry for a certain time to a certain density, the etching acids are applied. Moisture in the air, as well as excess or lack of moisture in the gelatin, has a serious effect on the etching quality as well as on the etching speed. The etching solution itself contains a certain amount of water to hasten or retard the etching time. From the above, one can readily see the importance of the proper moisture control. Further, the acid solution is maintained at definite temperatures since its activity is controlled by its temperature. In addition to the above, the acids and the washing solutions give off certain fumes which should be exhausted.

With all of these factors under definite control, it is simply a routine matter to obtain the desired etching on the cylinder without any serious difficulties.

The ideal arrangement is to have all of the above departments air conditioned at the same temperature and humidity. This prevents the changing of the meterial while it is going through the various departments. It also permits doors and passageways between air conditioned rooms to remain open, making it convenient for the operators. Uniformity should be maintained in not only one department, but throughout all the departments.

Ventilation in the Pressroom

After the cylinder has been etched, washed and dried, it is then ready for the pressroom. In connection with the development of rotogravure processing, there has been a rapid development in the building of presses for high-speed rotogravure printing. Further, the problem of removal of fumes, the drying of the inks, the development and handling of new inks have all been worked out on a scientific basis and today multi-color rotogravure can deliver at cylinder speeds of 20,000 per hour and copies at the rate of 40,000 per hour, with web widths up to 77 in. Higher speeds than indicated above have been maintained, which places it pretty close to regular daily newspaper speeds.

Important consideration should be given to the ventilation of the room and the removal of fumes from the web, as well as the drying of the printed web. The rotogravure inks for high speed presses carry a large percentage of solvents. This results in a large volume of fumes being liberated. In our work, we have found the best method is to pass the printed web, immediately after it leaves the roller, into an enclosed ventilating and drying hood, where with the proper use of air at the correct temperatures, nearly all of the fumes are liberated from the sheet. Based on actual tests, it has been found that between 80% and 85% of the vapors liberated by the inks are exhausted through the hood. Of the remainder, part is retained by the sheet and part is lost around the press. The part lost around the press isn't very great, however, because these fumes have a tendency to diffuse rapidly.

Ideally Ventilated Pressroom

To have an ideally ventilated pressroom, it is advisable to have additional ventilation to that exhausted from the web. It is recommended that an auxiliary system for both supply and exhaust air be considered. The exhaust system should be so arranged that it will draw the fumes liberated around the press through openings located at the most advantageous points. In addition, a fresh air supply system should also be provided which will draw air from the outside. This air should be tempered to approximately 75 deg. and carried into the pressroom to the operating side of the press. Outlets should be provided supplying fresh air to the working aisle at all times. The use of a supply and exhaust system in addition to the ventilating and drying hoods on the press itself will maintain a satisfactory condition and will reduce the fumes in the room to such a negligible point that they will hardly be recognized. In fact, such an arrangement will readily meet with the approval of both the health and insurance companies.

Relief Printing Pressrooms

This very same arrangement would readily fit in for a black pressroom ventilating system. Here the need for temperature is desirable because with all of the ink motions and rollers, the rollers (if composition rollers are used) will expand and if the condition gets very bad, might even melt down. Here humidity is quite desirable for a number of reasons. If the air is too dry, the rollers will dry up and crack. Where you have changes in humidity you will experience an expansion and contraction of the roller itself which requires some resetting for proper distribution. If the humidity is maintained constant, the rollers will remain uniform, last longer, and give better results.

Ink Misting

Where one or more rows of rotary relief presses are installed, it is desirable to bring in fresh air and supply this fresh air in the working aisle. The exhaust air should be removed from the drive side. Ventilation in black pressrooms is rather important because of ink misting where high-speed presses are in operation.

There have been some recent improvements for the reduction of ink misting. This has been accomplished by confining the space around the inking motions and rollers. These attempts have been very successful. However, the number of installations of this type are very few. The common practice today is to simply exhaust air from the pressroom. The ink mist has not only created objections in the pressroom, but has added a hazard to the exhaust system as well. This is brought about by the deposit of oil in the duct work which has resulted in rather serious fires.

Filters and Air Cleaners for Ink Mist Removal

We have given consideration to the removal of ink mist from the air. This is accomplished by having filters and air cleaners within the room itself. We draw a large volume of the air through these cleaners and discharge the air back to the pressroom. In other words, the air is recirculated at all times, thus reclaiming the air and reducing the size of the exhaust system. While some mist will be carried away by the exhaust system resulting in a slight coating in the ducts, this coating will be very small and can be removed more readily. A number of these cleaning units can be placed advantageously to help clean up the ink mist. In addition, fresh air should be brought into the pressroom to compensate for the air that is being exhausted.

Two-Letter Display Matrices

By HERMAN FREUND*

I SHOULD like to discuss briefly the new 18 and 24 pt. two-letter matrices and how to use them to get the best results. The widespread demand for these matrices indicates concretely the benefits and advantages derived from them by their users, benefits and advantages that can be measured in dollars and cents. Probably no other development has been so widely endorsed in recent times by the printing industry.

The outstanding advantage of two-letter 18 and 24 pt. display matrices is that, instead of having but one face on a font of matrices, two faces are available for instant use in one magazine and, consequently, many magazine changes are eliminated. But the greatest benefit can be derived only by selecting carefully the proper companion faces to be placed on these matrices.

While for the usual display composition, it is common practice to use the light face and italic or bold face of the same type family in a given advertisement, it is not at all uncommon to use type faces of entirely different families for newspaper heads. Therefore, the two-letter 18 and 24 pt. matrices are available in combination of type faces within a certain group or family as well as in mixed type faces. It is in the selection of mixed combinations of type faces where good judgment must be used in order to obtain most economical results.

There is a third group of 18 and 24 pt. two-letter matrices which performs double duty in type composition. These usualy carry a heavy bold face suitable for food store advertisements in the regular position and another face for heads and display composition in the auxiliary position. The bold face aligns on top with body faces up to 14 pt. and, therefore, it is suitable for two or three-line overhang work.

The quadding and centering device is almost taken for granted, but I think we should mention it as the greatest eliminator of non-productive time consumed in setting white space by means of keyboard manipulation. Several thousand of these devices are now in daily use and over 50% of all line-composing machines manufactured today are being equipped with it.

**Chief Engineer, Intertype Corporation, Brooklyn, N. Y. Abstracted from address delivered before P.N.P.A. Mechanical Conference, Harrisburg, Pa., April 1939.*

Constructive National Advertising Campaign to Help Printers Make a Profit

"WHAT the printing business needs is more buyers of the type who realize that it is to the printing buyer's advantage to have his work done by a printer who can earn a profit on the price quoted," asserted President Arthur Bentley of Miehle Printing Press & Mfg. Co., in announcing a pretentious educational advertising campaign commencing with the July issue of *Fortune*. Mr. Bentley stated his organization feels it is time that something definite and constructive be done to really help printers help themselves.

Continuing, Mr. Bentley said:

> I am sure I need not tell you that no subject in the last ten years has been given more lip service than the matter of printer's profits. Everyone connected in any way with the printing industry has been keenly aware of the problem, and almost everyone with a sincere desire to see conditions improved has had some criticism or suggestion to offer. More frequently than not, the printer himself has been blamed for the conditions which trouble him.
>
> We of the Miehle Printing Press & Mfg. Company do not believe that the printer himself can be justly criticized in this regard. Usually he is the victim of circumstances over which he cannot exercise control. Generally, he is no less intelligent than the business men in other lines, and the manner in which printers have responded to the highly competitive conditions which have been thrust upon them is no different than the manner in which many other business men have responded to similar conditions in their lines of endeavor. Frequently it has been stated that conditions in the printing industry will not improve until the printer helps himself. It has also been widely recommended that everyone with an interest in the printer's welfare must "help the printer to help himself." It is obviously impossible to disagree with either of these assertions.
>
> We of Miehle have decided that it is about time something definite and constructive be done to really help printers help themselves. We are about to inaugurate a program which we believe will prove of definite assistance and help many printers increase their volume of profitable business. This program is based on the undeniable truth that it is to the printing buyer's advantage to have his work done by a printer who can earn a profit on the price quoted. It is, of course, a fact that an identical quotation on the same job by two printers can represent a profitless order for one printer and a profitable order for the other. Under such circumstances, no one can deny that it is definitely to the buyer's advantage to place his business where it can be treated as only profitable business can be treated. This fact is already recognized by the intelligent buyers of printing.
>
> What the printing business needs is more buyers of this type. To that end we are inaugurating with the July issue of *Fortune* an educational advertising campaign of national advertising to reach the buyers of printing.

Concurrently with the appearance of each educational advertisement to printing buyers in *Fortune*, the Miehle Company will release a broadside by means of which printers who operate Miehle presses may capitalize upon Miehle national advertising among printing buyers. A complete set of plates in electrotype form for the first broadside has been prepared and is available to any printer who wishes to use them. The printer may drop his own name and address into the form and print whatever quantity he desires for distribution. One of these broadsides will be available each time a new Miehle national magazine advertisement makes its appearance.

The first broadside entitled, "Good Prices and Good Printing," is printed in black and blue ink with liberal halftone illustrations. Tipped inside is a postcard which the recipient may mail to his printer requesting a copy of a booklet entitled "Handy Manual for the Preparation of Printed Material." Printers can order any quantity desired for imprinting with their own name to answer inquiries resulting from their use of the broadside. These booklets, like the electrotypes, are being made available to printers at a nominal price. The booklet carries no advertising except the printer's imprint.

Stereotype Department

The Stereotype Room is another department that should be thoroughly ventilated and fresh air should be supplied in a manner so as not to create any objectionable drafts. The exhaust system should be so arranged that it can be cleaned out readily to get rid of the deposits from the metal.

The Composing Room

The Composing Room is one that requires careful consideration for proper ventilating and temperature control. This is especially true of the composing machine section. The machines are so closely placed that it is sometimes difficult to circulate sufficient air without creating objectionable drafts. However, a favorable working condition can be maintained by carefully locating the supply and return outlets. This is one room where working conditions for comfort should be considered seriously, in view of the high point of efficiency required of the workers.

Wherever it is economically feasible, proper ventilation and reasonable temperatures and humidities should be maintained in all production departments. The advantages of clean fresh air, reasonable temperatures and correct humidity are a decided asset in maintaining the proper efficiency and health of the employees. Expensive machinery and high production schedules must be maintained, and even a slight improvement in the worker's efficiency means a material help to the production rate and the ultimate operating cost of the product.

Roll Paper Storage

The question of Paper Storage should not be overlooked. While roll stock is well wrapped, and while the stock is specified for a certain percentage of moisture, nevertheless, if it is stored in a space that is hot and dry, the ends of the rolls will dry out, and when a roll in that condition is used on the press, web breaks will occur, bringing about considerable loss in press production. It is not uncommon to see the operators wetting down the ends of the rolls where a bad condition has developed, but if the roll storage is maintained at the proper temperature and humidity, unnecessary web breaks will be eliminated. Since roll storage is usually kept in a well confined space, it is not a difficult matter to maintain the desired humidity, and further, an inexpensive installation oftentimes will fulfill the needs.

Essential to Offset Printing

The above discussion fairly well covers the use of air conditioning in rotogravure and newspaper plants. The same thing applies in letterpress and offset, particularly where multi-color work is done. It is important to maintain the size of the sheet for accurate register. This is especially necessary where label work and good commercial color work are done. Here variations in moisture will sometimes change a sheet ¼ in. in length or width if allowed to be exposed to variations in humidity from 25% to 30%. Such variations are not unusual due to the sudden changes in the weather. To overcome this in most plants, the windows are kept closed to confine what moisture is present.

In offset work, it is necessary to control the moisture due to the evaporation brought about through the dampening rollers. Excessive moisture will cause wavy ends and expansion of the sheet to such an extent that it is almost impossible to run unless the sheet is hung up and allowed to dry. If the air is too dry, the sheets will curl and develop static which makes it difficult to run the stock on the press.

The same paper difficulties are experienced in unconditioned letterpress rooms in which accurate control of the sheets must also be maintained.

Give Moisture Same Consideration As Other Important Elements

There is no reason why the proper consideration shall not be given to moisture just as is given to the inks, stock and press. Moisture variations will throw sheets out of register as much as any other factor. Machinery is becoming more expensive due to the special automatic high production features, labor cost is rising, and the only way to maintain the low cost of production is to keep the machinery working at the predetermined schedule, and this can be accomplished only by the elimination of shut-downs. One of the most serious causes for delays is the lack of control of the moisture in the sheet. With correct air conditions the moisture content and the physical conditions of the stock can always be maintained at the ideal operating point, resulting in the lowest operating costs.

Journey

Through new plant of Federated Metals Division, American Smelting & Refining Co., reveals it is modern in construction and production methods.

By STAFF WRITER

THE new plant of Federated Metals Division of the American Smelting and Refining Company in Whiting, Ind., is located in a 15-acre improved section of the company's 40-acre tract. While the Federated Metals Division plant is devoted to the manufacture of many non-ferrous alloys, yet for the purpose of this article, reference is made principally to the production of type metals as used in the printing industry.

Referring to the perspective view of the new plant, the General Office building of modernistic design will be seen at the extreme left. The Garage building is at the right of the General Office building. One of the important buildings in the new plant is the Locker building (third building from left). Here are located the offices of the personnel director, plant doctor, lunch room, lockers and tile showers for plant employees.

The small building at the right of the General Office building houses the weightmaster's office. A sixty-foot beam scale is provided for weighing a truck and trailer at the same time. All inbound truck shipments are weighed on this scale. To avoid errors, the scale weight is later verified by weighing shipments in the Receiving department after the trucks have been unloaded.

By referring again to the illustration, it will be seen that the main plant consists of six buildings. Manufacturing operations are confined to the center group of five buildings.

In this five building group and closest to the Locker building is the Receiving building. All material brought to the plant is unloaded from freight cars or trucks and from here routed to the proper department for smelting, refining or manufacture. Ten freight cars and six automobile trucks or trailers may be unloaded at the same time while railroad sidings or spurs on the property have a capacity of forty full cars.

Immediately at the right of the Receiving building is the Lead Refinery where all drosses and ores are smelted, treated and converted into metal.

The center building, extending the full length of the five-building group, contains the General Foundry. In this building the various metals are treated, mixed and manufactured into alloys.

The smallest of the five buildings which adjoins the General Foundry, is the Finishing building. Here the alloys receive final treatment and are poured into pigs, bars or ingots.

The remaining building houses the Stock Room and the Shipping Department. Here five freight cars and six trucks or trailers may be loaded simultaneously.

One of the interesting features is that the roofs of all five buildings are provided with air vents but the reader will note an absence of chimneys. Smoke from all furnaces is trapped and conveyed through a flue line, visible at the rear of the building, to the Cottrell building located between the center buildings and the water tower. In this building the trapped smoke is treated with chemicals to remove all metallics. The remaining vapor or fume, which is colorless and free of metallics, is released through the six chimneys on the Cottrell building.

In the rear of the Cottrell building is an oil storage tank of 100,000 gallons capacity and at the right of the tank is a water tower. Hidden from view (back of the oil tank) is a water pump. For cooling purposes, water is used exclusively and is pumped into the plant from Reichert Lake, in the right background. After it has passed through the cooling system it is emptied into Little Wolf Lake which drains into Lake Michigan.

An unusual feature of this plant is the overhead crane system used exclusively for the transportation of materials in the five center buildings and all outside platforms. Material arriving in freight cars or trucks is moved into the plant by the overhead system and carried to the furnaces or departments in which it will be used. Manufactured metals are loaded automatically on skids or in movable bins and conveyed to the warehouse for stock or to one of the shipping platforms where it is deposited by the crane in front of a freight car or in the truck that is being loaded.

The overhead crane system is said to be an innovation for a smelting and refining plant and has many advantages over the former method of unloading, piling or loading pig metal by hand. It permits freedom of movement that is impossible in plants where material movement is confined to floor trucks. Finished metals may be piled higher to conserve floor space and there is a substantial reduction in handling costs.

Another unusual feature of this plant is the system in the production line which permits continuous operation twenty-four hours a day. The position of the cupolas and furnaces in relation to the production line, together with their mechanized construction, allows uninterrupted operation. When one furnace is being re-lined or re-built, auxiliary furnaces supply the production line.

This plant is claimed to be the newest and largest of its kind in the world for the manufacture of type metals and other alloys and is equipped only with modern machinery. The laboratory and research facilities are outstanding. Heralded as unusual is the manufacturing control system which permits the making of progressive tests, both chemically and physically, at pre-determined temperature changes. This scientific control, states manufacturer, insures finished products of positive uniformity and controlled quality.

All mechanized developments pioneered by the Whiting Plant are being adopted by other plants of Federated Metals Division. Federated Metals Division, in addition to the Whiting Plant just completed, also has under construction at the present time three more new plants all of which are being built under the guidance of the parent company, American Smelting and Refining Company.

The Research department of Federated Metals Division, American Smelting and Refining Company, has been doing experimental work with type metals for a number of years. It has been announced that a new process has been developed for the manufacture of type metals on which a patent is pending.

Perspective view of new plant of Federated Metals Div., American Smelting & Refining Company

Below left: Receiving — Below, right: Lead Refinery — Little Wolf Lake — Reichert Lake

General Office — Garage — Locker Bldg. — Above, center: General Foundry — Below, left: Shipping — Right: Finishing — Cottrell Bldg. — Water Tower

R. H. Jaw Device

In use on linotypes in Oklahoma Press Publishing Co.'s composing room automatically provides 1 pt. indention on slugs.

By B. T. JUERGENS*

SEVERAL years ago, the *Daily Morning Phoenix* and the *Evening Times-Democrat's* makeup was changed from 6 to 4 pt. column rule. It was found advisable to provide more white space between the ends of the reading lines and the column rule than is provided because of the narrow shoulder on the 4 pt. column rule. I have been told that several newspapers have been using 4 pt. column rule in combination with 1 pt. indention on each end of the slug for single-column reading matter.

We felt that we wanted to provide a mechanical means for casting single-column slugs with 1 pt. indention on each end rather than to depend upon the operators dropping a thin space on each end of the line. Besides, the thin spaces being approximately 2 pts. thick, would give us more indention than we wanted. After some investigation, I failed to find a condition that would apply to our composing room.

We operate 10 Linotypes in our composing room. Five of them are used only for straight-matter purposes. On these five machines the left and right-hand vise jaws are adjusted permanently by the means provided to cast single-column slugs with 1 pt. indention on each end of the slug.

During the course of each shift, however, five of the machines are used to set advertising matter and cut lines, as well as news matter. On these five machines we are using a device for securing the 1 pt. indention which can be thrown in or out of commission according to the kind of composition.

Most Linotype machinists know that the left-hand vise jaw adjusting rod is a small problem, but on the right-hand vise jaw there is but little clearance between the jaw itself and the adjusting screw. Incidentally, on the left-hand vise jaw adjusting rod we use a thimble having 1 pt. thick cap to obtain indention on the left end of the slug.

In discussing the matter with Machinist H. E. Juergens, we decided that the right-hand vise jaw indention device as shown in the accompanying halftone probably would serve the purpose to best advantage and for reason of economy would be preferable.

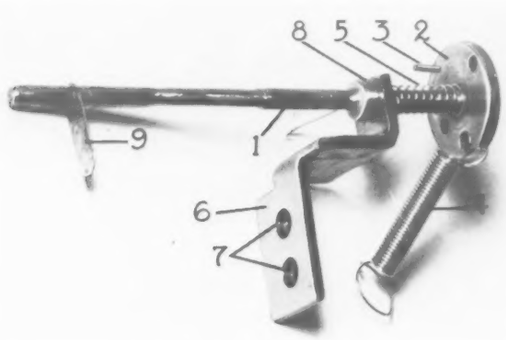


Fig. 1.—View of Juergens right-hand vise jaw 1 pt. indention device for Linotype machines. Mostly, discarded parts are used for making the device. Its construction is explained in the accompanying article. Stop 9 is soldered to rod 1 and the end of the rod is inserted in the bearing of bracket 6 before screwing disk 2 to rod 1. The 1 pt. blade 9 also is sweated to rod 1 with solder. Working diagram for making bracket 6 is shown in Fig. 2.

Here is a list of material used in making the one-point right-hand jaw indention device. Some of the materials used are discarded Linotype parts.

1 13-pica, 8 pt. left-hand liner.

1 assembling elevator gate hinge rod (cut to $3^{13}/_{16}$ in. length).

1 assembler star wheel friction disk.

1 piece clock spring ($1\frac{1}{2}$ in. by $\frac{1}{4}$ in. by 0.014 in. thick).

1 Spaceband transfer lever pawl spring (new).

1 keyboard keyrod spring (new).

1 assembling elevator gate spring roll (new).

2 r.h.i.m. screws ($^{8}/_{32}$ by $\frac{1}{2}$ in.).

2 steel pins ($\frac{1}{2}$ in. long by $^{1}/_{64}$ in. diam.).

It is a rather difficult matter to describe the application of the device to the machine, but I am sure that by noting the halftone illustration and the perspective diagram of the bracket together with the following descriptive matter, that those who may wish to apply this device will not have undue trouble in grasping the idea. The truth is, it takes longer to describe it in print than if one were to give you the device and tell you to go to it.

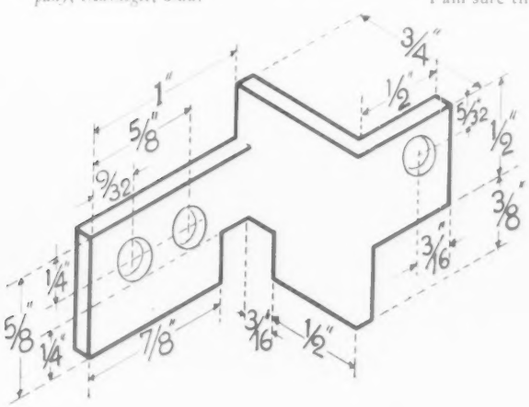


Fig. 2.—Perspective diagram showing bracket made from a discarded 8 pt. Linotype liner for right-hand bearing for Juergens right-hand vise jaw 1 pt. indention device.

The device is held in place by bracket 6 by means of two 8-32 screws on the right-hand vise jaw block under the banking plate in such a way that the left-hand end of rod 1 will be free to enter a $^{3}/_{32}$ in. diam. hole, $\frac{1}{2}$ in. deep in the right-hand vise jaw block drilled about $\frac{1}{2}$ in. from the abutment of the right-hand vise jaw and the jaw block to permit bracket 6 to carry the rod 1 about $^{1}/_{16}$ in. from the right-hand vise jaw adjusting screw.

When in operation, the indention blade 9 is in lower position on rod 1 and rests between the right-hand vise jaw block and the block adjusting screw. To provide a positive stop for the blade 9, one of the $\frac{1}{2}$ in. long by $^{1}/_{16}$ in. diam. pins protrudes from a hole drilled in the right-hand vise jaw block. The position of the pin is determined by drilling a hole in the block immediately below and about $\frac{1}{8}$ in. to the right of the right-hand vise jaw adjusting screw.

To secure the 1 pt. indention of the right-hand vise jaw, the operator pushes disk 2 straight in against stress of spring 5 about $\frac{1}{4}$ in. and then turning disk 2 to the right to position pin 3 vertically above rod 1. The pin 3 indicates to the operator that the blade 9 is in position to secure the 1 pt. indention.

To make the indention device inoperative, the operator pushes disk 2 slightly toward the right-hand vise jaw, turns disk 2 to the left about $\frac{1}{2}$ in., and spring 5 deflects blade 9 on rod 1 to the right. At the same time, spring 4 rotates disk 2 counterclockwise until blade 9 rests against the shank of right-hand vise jaw adjusting screw. Another bit of description which will help you understand operation of the device is as follows: Spring 4 holds blade 9 against the stop pin (not shown) in right-hand vise jaw block while the device is in operation. Spring 5 keeps the 1 pt. blade 9 against the end of the right-hand vise jaw adjusting screw while the device is in operation. Conversely, spring 5 banks stop 8 against the bracket 6 and spring 4 holds blade 9 against shank of right-hand vise jaw adjusting screw when the device is not in operation.

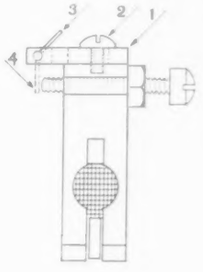


Fig. 3.—So the operator won't overset his lines in the assembler, a 2 pt. filling piece is applied to the Linotype assembler slide clamp to be used in connection with the Juergens right-hand vise jaw 1 pt. indention device. A bracket 1 made from discarded 8 pt. liner, $\frac{3}{8}$ in. by $\frac{3}{4}$ in., is fastened to the top of the clamp by an 8-32 by $\frac{1}{4}$ in. rnd. hd. screw. The filling piece 3 is made from clock spring 2 pts. (0.028 in. thick) and is $\frac{1}{4}$ in. by $\frac{1}{2}$ in. size. The arrow 4 indicates the filling piece dropped down in position against the clamp adjusting screw. When down in this position, the assembler is automatically set 2 pts. less than normal.

*Senior Foreman, Oklahoma Press Publishing Company, Muskogee, Okla.

Simplifying Metal Problems

By M. L. FRIDAY *

THE history of type metal alloys discloses that while attempts have been made to use metals other than lead, tin and antimony in the mixtures, and experiments are still being made, these changes have not, so far, borne any real fruit. Lead for bulk; antimony for hardness and to reduce shrinkage; copper for hardness and strength; tin for fluidity; and, laterly, cadmium for low fusing in some classes of type metals, are still the order of the day.

Remelting Effects

While the same ingredients are used in various mixtures which, as a group, constitute "type metals," each class of metal acts differently in the changes effected by remelting. In general, and for practical purposes, the following statement of the effect of remelting upon the formula holds good:

In line-casting metal, the percentage of tin decreases, while the antimony content increases.

In monotype and sorts-caster metals, the percentages of both tin and antimony decrease.

In stereotype metal, the percentage of antimony remains fairly constant, while the tin decreases.

This action is caused by the fact that an alloy of lead with antimony up to 12 or 13 percent is a good mixture; while above 13 percent part of the antimony is held in suspension and, being lighter than the lead, works up to the top of the pot and is skimmed off in the dross.

Factor Causing Differences in Action

At this point it may be well to call attention to that factor which causes the differences in the action of the various type metal mixtures—the proportion of antimony.

Authorities differ on the fusing points of the various elements in type metals, but we quote from the U. S. Bureau of Standards as follows:

Metal	Temperature Centigrade	Fahrenheit
Tin	232.0	449.6
Lead	327.4	621.3
Antimony	630.0	1166.0
Copper	1083.0	1981.4
Cadmium	321.1	610.0
Bismuth	271.1	520.0

A consideration of these fusing points would lead to the natural conclusion that increasing the proportion of antimony to lead would raise the fusing point of the mixture. This is true, however, only above 13 percent antimony. From zero antimony up to 13 percent, the fusing point of the alloy decreases. This accounts for the variation in the effect of remelting on the three general classifications of type metal—the formulae, for our purpose of comparison, being as follows:

	Tin	Antimony	Lead
Line-casting Metal	4%	11½%	84½%
Stereotype Metal	5%	14%	81%
Monotype Metal	6 to 10%	16½ to 20%	70 to 77½%

Copper

Copper, which is a natural impurity in pig lead, is a decided advantage to the mixture in amounts up to .05 or .06 percent, in that it does not affect the casting quality of the metal and does add materially to the strength and wearing quality of the type or plates.

Believes in Slow Acting Fluxes

Some fluxes are especially designed to remove impurities (including copper) but, while this is a good feature if copper is present up to .10 or .15 percent or more, under normal conditions such fluxes are detrimental to the stock. Fluxes compounded along these lines are usually very rapid in their action.

We like to think of flux as a metal soap, that is, as an agent to clean the stock, reduce the amount of free metal skimmed off in the dross and, through the presence of charcoal, to act as a deoxidizer. We are believers in the use of mild slow acting fluxes. While the action may not be so spectacular, the results, day in and day out, will be far more satisfactory and less harmful to the metal.

Drossing Stereo Metals

In drossing off stereotype metal, it is good practice to sprinkle the desired amount of mild flux, about 4 ounces to the ton, over the metal, when casting is finished, and allow it to stand until the following day. Then add about 1 ounce of flux per ton and stir the metal vigorously. The dross will have "rotted out" overnight and be thoroughly dry and ready for skimming. If this treatment is repeated twice a week, it will be found ample under average operating conditions.

Fluxing Composing Room Metal

The remelting of composing room metal cannot, in most cases, be handled in the same way, but it is advisable to allow the flux to remain on the metal as long as possible.

It is essential always that all traces of flux be removed from the metal after it has done its work. This is especially true of composing room metal, and is extremely important if the flux contains paraffin, oil, or grease. Many cases of dirty magazine channels, with failures of mats to respond, are due to oily flux residue transferred to the machine mats from the metal, and oily dust carried into the magazine channels by the mats. This is also one of the direct causes of the side walls of the mats crushing in. The flux residue causes the metal to adhere to the side walls of the matrices and spacebands, and, when assembled in succeeding lines, crushes in the side walls of the adjoining mats.

To completely remove the flux from the hot metal it is necessary that the metal be brought to a temperature 50 to 75 deg. F. above the machine operating temperature, and then very thoroughly agitated until all smoking ceases.

Virtues of the Potato

In spite of the many new devices and fluxes put on the market for the treatment of type metal, we are still of the opinion that boiling the metal with a potato or a piece of green wood is still mighty good treatment for dirty metal. It should, however, be borne in mind, the boiling should not be continued indefinitely, that is, after the metal is cleaned, as to do so is a direct cause for an undue loss of tin and antimony.

Probably the most important quality in a working supply of type metal is uniformity. Assuming that the metal is clean and of such formula that it casts satisfactorily, and that the plates or type are sufficiently durable to meet the user's requirements, the next consideration is to keep it that way. We all know from experience that each remelting changes the composition. If the metal is receiving the attention it deserves, this change is very slight per cycle of use, but if the stock is badly overheated or is skimmed when too cold, the change in the mixture will sometimes be marked.

Differences in Metal Conditions Respecting Toning

A point which is sometimes overlooked is the difference in conditions attending the use of typesetting machine and stereotype metals. In stereotype metal, the bulk of the stock is under heat at one time. It is, therefore, a comparatively simple matter to overcome an unbalanced condition in the formula of this metal, as a large part of the stock can be treated at one time. In the use of typesetting machine metal a very different condition prevails. The treatment of the metal must necessarily extend over a long period of time, if it is well done, as so much of the stock is tied up in standing composition, sorts, spacing material, etc. The active stock repeats on an average of each third day in daily newspaper work and, when this is treated, the danger of over-toning presents itself. If the toning is stopped, the standing matter, when released, upsets the formula. This feature indicates the advisability of maintaining the composing room metal at a uniform formula at all times, by adopting a replacement system and avoiding the necessity of at any time drastically changing the formula.

Unwise Economy

Business conditions during the last few years have made economy a watchword but in handling metal many things are done in the interest of economy which prove unwise. We refer, principally, to such practices as allowing stocks of metal to become unbalanced; maintaining too low a temperature during inoperative time; putting back into composing room metal, cuttings from saws where electros, zinc etchings, etc., are cut or trimmed; and adding to the stereotype metal anything that looks like a stereotype plate furnished sometimes by syndicates or national advertisers. We feel sure that more care would be exercised in the treatment of metal stocks if the metal were considered similar to the blood streams in our bodies. It performs similarly. In its daily passage through the plant, it becomes impregnated with impurities, much of which can be avoided, and is treated in the furnace and passed out for use again.

Please bear in mind that in a plant established twenty-five years ago, there is still in stock some of the first metal purchased as, well as part of each succeeding batch, unless at some time it became necessary to replace the entire stock.

First Class Equipment for Remelting

We recommend first class equipment for the remelting of metal in the plant, and a man to operate the furnace who is conscientious and who should be allowed the time necessary to do a good job. This is real economy, as the efficiency of twenty-five high-salaried machine operators and $100,000 of equipment often depend upon two or three hours of a laborer's time.

Several years ago, in order to establish the actual metal expense in newspaper printing our company gathered from two representative papers with a combined circulation of 450,000, the figures on metal expense as compared to other mechanical expense. The net metal expense for the two newspapers amounted to $8,657, as compared to $2,207,632 or other mechanical expense which covered the items of ink, paper, power, mats and fuel. Based on this investigation, the net metal expense was less than ½% of the mechanical expense, exclusive of labor.

*E. W. Blatchford Co., New York. *Abstract of address at 1939 P.N.P.A. Mechanical Conference, Harrisburg, Pa.*

Publication Chase An Economy For The Commercial Shop

As is well known, the publishers of magazines and newspapers by standardizing pages have worked out many savings by fitting equipment of the various departments to the standard page. The run-of-the-hook assortment peculiar to the majority of commercial shops does not permit full utilization of these advantages but in some instances the commercial printer may use publication equipment to advantage.

An example is the substitution of the publication chase for the common book chase in the lockup of sixteen-page forms in commercial shops. The sixteen-page form is a common one and when the book chase with a long and one short cross bar is used line-up and register trouble on both stone and press is expected as a matter of course, the "out" generally most pronounced farthest from the short cross. By this antiquated arrangement line-up of heads and register are dependent on correct adjustment of the length of sixteen pages and stonemen and pressmen know well what this generally means. Nevertheless the book chase is still used in many shops at a great loss of time when the publication chase may be substituted with the consequent saving.

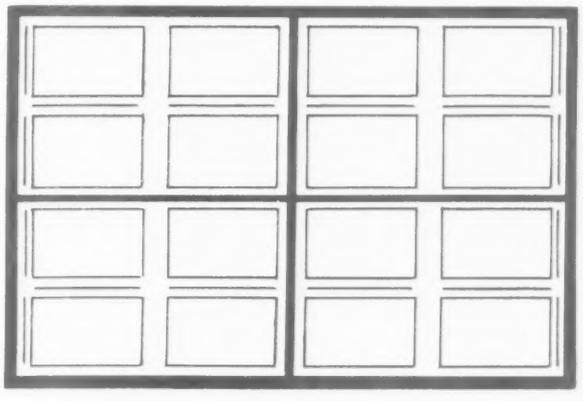


Figure 1—Book Chase

In the publication chase with two short crosses, the quoins push the heads of all pages against cross bars making line-up and register much easier and not dependent on the length of pages. A very great help and convenience is found in the modern direct-thrust quoins which may be had in lengths fitting the entire length and breadth of standard pages. A page requires but one of these quoins at the foot and another at the side.

The stableizing effect of two crosses which also afford the fixed base of the heads of pages in register from which to work make the work of stoneman and pressman in shimming or justifying the pages much simpler.

When shimming is apparently finished, if the book chase is used, the quoin squeeze must be the same at each lock-up else the shimming means little because the quoins are driving half the length of the form against the short cross and the yield of the matter in the form varies with its distance from the quoins. This drive of the quoin is bisected in the publication chase with consequent decrease of variation in yield.

Not to be overlooked is the stouter construction against chase and bar spring or yield of the publication chase. The unavoidable distortion is bound to be less because the chase is braced better with two short crosses.

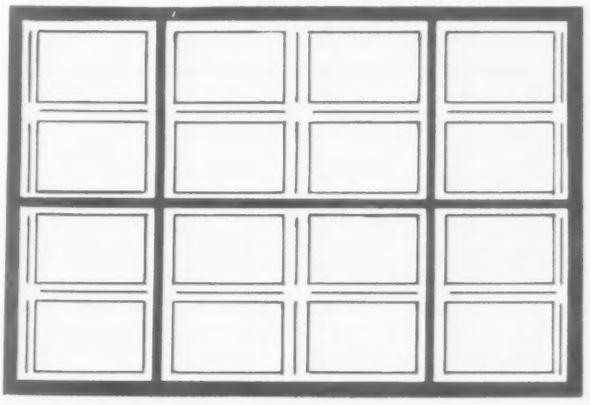


Figure 2—Publication Chase

It is found that in addition to saving time in line-up and register the use of the publication chase affords the secure lockup which permits faster operation of the press with less danger of workup, pull-out and slur and the unexpected smash.

It is advisable to keep records which clearly show the time spent with original and with more modern equipment substituted to accomplish a saving and if this test is applied to the book and the publication chases the result is surprising.

Which leads to the notion that if printing executives would keep records worthy of the name showing the causes of time avoidably lost, various new kinds of equipment would be added. As an example, truly horrible, if a record is kept of the time lost through lack of air conditioned workrooms, this modern improvement would become common. The loss of materials is very considerable in addition to the loss of time when lack of air conditioning makes trouble from static, curly sheets of paper, variations in ink and rollers, the absorbency of paper, etc., the rule rather than the exception in a print shop. A comprehensive record in many shops will show it would be true economy to install air conditioning apparatus.

Recent Linotype Installations

Linotypes recently have been installed by the Fort Smith (Ark.) *Times-Record* and the *Southwest American;* Louisville Times Company, Louisville, Ky.; Fine Printers, Inc., Cleveland, Ohio; Monterey (Calif.) *Peninsula Herald; Spokesman-Review*, Spokane, Wash.; Russky Golos Publishing Corporation, New York City; Kennedy Print Shop, Baton Rouge, La.; Laurel (Miss.) *Leader-Call;* Fort Plain (N. Y.) *Standard;* Springfield (Tenn.) *Herald-News;* Lasky Company, Newark, N. J.; *Western Recorder*, Louisville, Ky.; Marshall Typesetting Service, New York City; *Evangelical Press*, Harrisburg, Pa.; Monumental Printing Co., Baltimore, Md.; Press Printing and Publishing Company, Farmington, Mo.; Winter Park (Fla.) *Orange Press* and the *Herald;* William B. Straube, Los Angeles; Conrad (Mont.) *Independent-Observer;* Carl A. Johnson, San Pedro, Calif.; Lederer, Street & Zeus Co., Berkeley, Cailf.; Winsted (Conn.) *Citizen;* Greenwich (N. Y.) *Journal;* Antigo (Wis.) *Daily Journal;* Hudson & Nixon Printing Co., Montgomery, Ala.; *McKean Democrat*, Smethport, Pa.; Bridge & Byron, Printers, Concord, N. H.; Polish *Daily News*, Chicago; Oxford Press, Providence, R. I.; Adcraft Studios, Inc., Nashville, Tenn.; Turner Press, Yonkers, N. Y.; Colonial Press, Omaha, Neb.; Chattanooga Printing & Engraving Company, Chattanooga, Tenn.; Jonesboro (Tenn.) *Herald* and the *Tribune;* Alice (Texas) *Echo;* Elizabeth Typesetting Company, Elizabeth, N. J.; Kelmscott Corporation, Aurora, Ill.; Moore-Langden Printing & Publishing Company, Terre Haute, Ind.; *Republican-News* and *Daily Banner*, Mount Vernon, Ohio; Acorn Press, Inc., Ridgefield, Conn.; Benson Typesetting Company, Toronto.

Equipment - Supplies

Streamlined Heli-O-Lite Camera Lamp

The new close-coupled 35 ampere Heli-O-Lite Camera Lamp, just placed on the market by The C. F. Pease Company, is said to be the first streamlined lamp in the photographic arc lamp field.

The new Heli-O-Lite "35" is an open flame arc lamp designed especially for photographic dark room use or other applications where

space is at a premium, states Thomas Lord, president of The C. F. Pease Company, in announcing the Heli-O-Lite. Compact in shape, it is especially designed for copy board mounting, while on its own standard it is usable in very close quarters. An adjustable bracket adapts the lamp for printing.

The exterior of the lamp was designed by Barnes & Reinecke, industrial designers, working in conjunction with H. J. Brunk, chief engineer of The C. F. Pease Company.

Forty-five percent less space is required for the same type of mechanism which has been condensed into the smaller size at no sacrifice in illumination, it is claimed. It is also claimed the new lamp retains the Pease balanced floating mechanism and circuit which provides smooth operation with a long-burning arc that ordinarily consumes the carbon down to 3 in. length and often burns for 45 min. without breaking the arc.

Automatic Mouthpiece Wiper

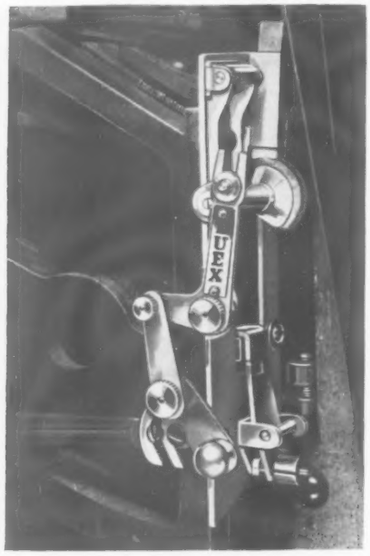
The Sofnas Automatic Mouthpiece Wiper announced by Automatic Saw Sharpening Company, wipes the mouthpiece of a Linotype pot crucible. The wiper assembly is mounted on the mold gear arm at the left side of the machine. The wiper arm normally is positioned above the metal pot in such position that when actuated by a lever linkage with a cam on the hub of the first elevator cam the wiper blade describes a downward movement (segment of a circle) across the face of the mouthpiece to remove any metal accumulations on that portion of the mouthpiece which contacts the back surface of the mold. By removing the metal "tinning" from the mouthpiece face, back squirts are eliminated and metal accumulations back of the mold disk and on the floor are greatly reduced.

P-Double-E File No. 1G9.

The Duex Automatic Spaceband Wiper

The Duex Automatic Spaceband Wiper announced by Linotype Parts Company is attached to the Linotype spaceband box in place of the standard gate. Its function is (1) To deposit a film of demetalizing chemical at the casting point of the spaceband sleeve to prevent the usual oxidation at that point, and (2) To lubricate the spaceband long wedge by means of a carbon stick which is about 75% graphite.

The demetalizing chemical lies vertically in a small magazine above the semi-circular felt shown in the illustration. A small weight above the chemical stick holds it against the semi-cicular felt at all times. An arm of the Duex Wiper is attached to the spaceband box lever arm, and by compounded leverage



operates the semi-circular felt wiper when the spaceband key is depressed by the operator.

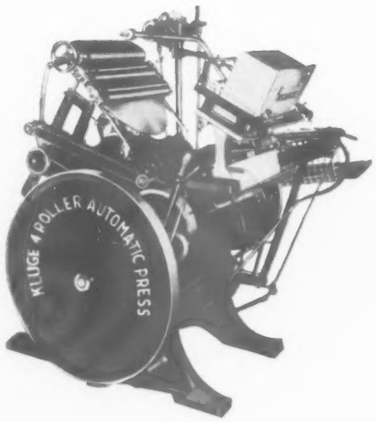
As the spaceband box arm makes its downward movement prior to the lifting of the spaceband pawls, the wiper deposits a chemical film on the spaceband sleeve. The return of the spaceband box arm to its normal position actuates the semi-circular felt to clear the advancing spaceband. Thus no interference with the dropping of the spaceband is possible, states sponsor.

As the spaceband is lifted by the box pawls, it swings into the gate for the drop down to the assembler. At this point the spaceband long wedge strikes the carbon stick. As it falls into the chute it rubs and is lubricated by the carbon stick. The carbon stick is held in an adjustable arm which is claimed not to retard the action of the spaceband in passage.

Felts, chemical and carbon stick give about a year's wear in the average plant.

Delivery Tables and Joggers for Kluge Automatics

Brandtjen & Kluge, Inc. announced in the May issue the new four-roller model of the Kluge Automatic Press. The company now announces that this new model is available with either the 14 in. capacity delivery table, as shown in the illustration, or with a 5½



in. capacity jogger. This makes the Kluge Automatic Press available now in four models:

(1) 6-roller with 14 in. delivery table.
(2) 6-roller with 5½ in. jogger
(3) 4-roller with 14 in. delivery table.
(4) 4-roller with 5½ in. jogger.

Any of these four models can be obtained in either the 10 in. by 15 in. or 12 in. by 18 in. sizes.

P-Double-E File No. 5LL28

Adjustable Mold Base Plate

A patent, No. 2,152,009, has been issued to Harry C. Zauner on a means for adjusting the mold cavity without the use of packing pieces, and for directing the stream of molten metal by a rear closure adjusting means to right, left or center of the mold cavity on the Monotype Giant Caster mold. One object of the invention is to provide means for adjusting micrometrically the mold blade and cores without interchanging parts and without removing the mold from the machine. Another object is to provide micrometric adjustment of the closures, especially the rear closure, with respect to the mold cavity, to permit directing the molten metal changeably against the type character in the matrix.

The means for adjusting the mold cavity consists of a rack and gear mechanism incorporated in a special mold base plate. By rotating a spindle on the outside of the mold base plate, so as to actuate the gears and rack members, the mold cavity is advanced to the right or left, making it possible to center the mold cavity above the orifice beneath the mold cavity so as to produce a substantially uniform surface on the face of the type to be cast.

Another rack and gear mechanism, also incorporated in the mold base plate, provides for adjusting the rear closure tongue by means of a spindle extending to the outside of the mold base plate. By rotating the spindle, the closure tongue is moved to the right or left of center to direct the flow of metal against the matrix. If one side or the other of the cast character is pitted, asserts the inventor, the rear closure tongue may be manipulated either to the right or left so as to direct the molten metal stream towards a "cold spot" causing the pitted surface on the type character.

To indicate the relative position of the mold with respect to the orifice, a scale is provided in the edge of the mold. An indicator attached to the abutment plate indicates the relationship of the parts.

One nozzle is used for all sizes of type.

Adjustment of the orifice may be made while the machine is operating.

Further information about the Giant Caster adjustment mold base plate may be obtained from Curtis-Grey Engineering Company direct, or in care of *Printing* EQUIPMENT *Engineer*. *P-Double-E File No. 1G8.*

Slotted Eye Mold

The Imperial Type Metal Company announces the recent purchase of United States Patent Number 2,072,817 from Intertype Corporation. This patent originally was granted on Mar. 2, 1937, to Elmer H. Hostetler, and pertains to ingot molds used for casting pigs of type metal for Margach, Ludwick, Kendall, Streamline, and other similar feeders.

Formerly, type metals for these feeders were cast with a closed eye in one end of the pig. The Imperial Type Metal Company's mold is so constructed as to cast a pig with a slotted eye permitting the eye segments to drop by gravity into the pot as they come into contact with the molten metal. This eliminates the necessity for removing the unmelted eye from the feeder hook.

The Imperial Type Metal Company announces that its slotted-eye pig casting molds are now being offered to the Printing Industry.

Engrav-O-Graph Produces Halftones

The Engrav-O-Graph, a machine using a beam of light, a photographic negative or positive, a photo-electric cell, a vacuum tube amplifier and a small cutting tool to produce a newspaper halftone engraving on type-high stereotype metal, has been announced by the Lynch Corporation. By this method it is claimed a single-column cut can be produced in less than 10 minutes and at a cost of a few cents. The plate itself is typehigh stereotype metal. A device on the machine prepares the surface to receive the engraved image.

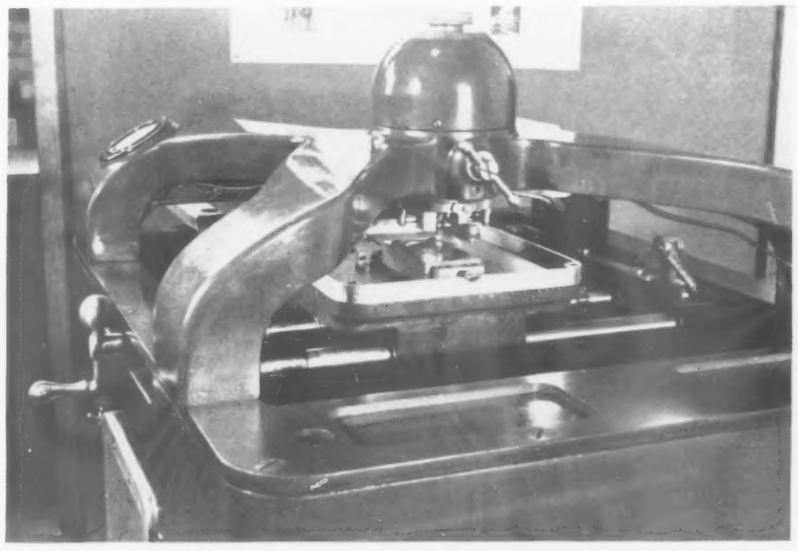
A beam of light and a photo-electric cell are employed to scan the copy. Impulses received by the photocell as the beam of light passes over the copy are amplified by the vacuum tube amplifier and are sent to an electrically controlled cutting device to engrave the image on the plate.

The copy is placed in a holder which passes back and forth in a reciprocal motion, being scanned by the beam of light. The plate is placed in a vise under the cutter mechanism, which is adjusted with a micrometer to insure the correct height. The machine is set in motion with a small instantaneous reversible motor which produces the reciprocal motion. A ratchet provides for a step-by-step cross-feed so that each part of the copy is scanned in a series of successive lines. Adjustments are provided to limit the stroke of the machine for different size engravings. The present model will produce up to 4-column engravings.

The copy is scanned parallel to the side of the copy and the plate is so placed that it is engraved in a series of lines parallel to the sides of the plate. The screen is produced electrically by means of a phonic generator which spaces the dots at the correct distance apart, the size of the dots depending on the tone of the copy. In each alternate line the dots are spaced 180 deg. out of phase so that the completed cut has the appearance of the conventional 45 deg. halftone engraving.

Electrical controls regulate the depth of the cutting, a contrast control so that highlights and shadows may be accentuated and a switch that makes it possible to use either positive or negative copy.

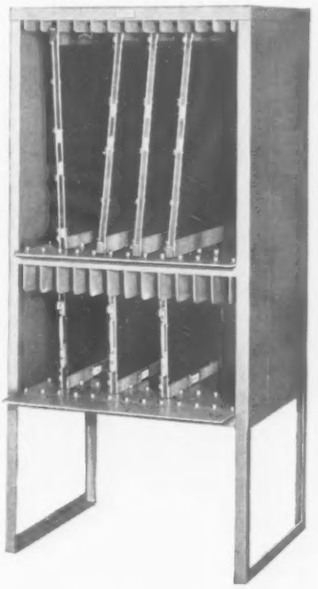
Developed in the experimental laboratories of the Lynch Corporation, the machine is the result of a number of years of experimental work and research under the direction of Joe A. Bennett, formerly director of the Indiana University Press, where preliminary experimental work was done, and William C. Speed, of New York, N. Y. Plans are being perfected for exhibitions and demonstrations of the device before conventions in the near future. It is expected that production will begin shortly.



View of Engrav-O-Graph which engraves halftones in type-high stereotype metal for newspaper use. Machine employs beam of light, photographic negative or positive, photo-electric cell, vacuum tube amplifier and small cutting tool. The top of the machine shown here rests upon an enclosed cabinet so that the mechanism is approximately waist-high. In this picture a piece of type-high stereotype metal block is shown clamped in the vise ready for the engraving tool to cut in the design. Sponsors say present model will produce up to a 4-column cut. Single-column cut, it is claimed, can be produced in less than 10 minutes.

Intertype Magazine Rack

An improved magazine rack is announced by Intertype Corporation. The rack will accommodate twelve full-length and twelve split or side magazines of Intertype or other



manufacture. The bottom plate is made of a non-corrosive material that is easy to keep clean. Full particulars will be sent upon request to Intertype Corporation.

(*Continued on Page 66*)

Technical Literature

GE Press Drive and Control

Illustrated booklet describes press drives and controls installed in several newspaper pressrooms. *P-Double-E File No. 5CC.*

Barker Rotary Shaver

Folder discusses function operation and mechanical features of the Barker Rotary Shaver fortrimming plates and base. *P-Double-E File No. 2G27.*

Solving Industrial Crimes—No. 22

Illustrated booklet discusses instruments for recording press speeds, down time, power consumption, voltage and maximum demand in newspaper, magazine and book plants. *P-Double-E File No. 8J.*

Saw Rebuilding

Wallin Manufacturing Company publishes two color illustrated folder in which is described the company's method of modernizing Miller Saw-trimmers. *P-Double-E File No. 1Z.*

Bracket Utility Stripping Machine

Illustrated folder, 4 pages, 2 colors, describes new Bracket Utility Stripping Machine for hinge cover, plain square back and round back books, sheet reinforced at edge and sheet reinforced at center work. *P-Double-E File No. 6M.*

Paint, Light, Layout and Drives For Printing Plant Efficiency

By J. S. BULLARD*

THE one most effective way of getting costs down is to make the plant itself as efficient as it can be made. Some years ago, one printer did this by rearranging his presses and other equipment. In order to do this, he had to buy some additional electric motors for he had been using belt drive to a considerable degree. The lay out was made with the view of saving as many steps as possible. The net result was that it became unnecessary to add floor space, labor was saved and a very satisfactory return thus earned on the investment.

There are four important essentials in making the plant as efficient as possible. These are, paint, light, layout of the plant and power applications. Freshly painted, light colored walls and ceilings help to make a place more cheerful and also to make the lighting more effective. Dingy paint absorbs a great deal of light. On the other hand walls cen be painted with so glossy a white finish that there may be some trouble from glare. That is, the walls will be too bright. A white or a light color in a matte surface is usually best. In any case the walls should diffuse the light sufficiently so there can be no glare. A mirror surface reflects the light irregularly and it is diffused to a degree that there is no eye strain when one looks at the wall. This fact should be borne in mind when painting. Glossy walls are brighter but they may be too bright for the comfort of those working in the room.

Green, Blue, White

Colors ranging from light green, through blue to white give much better results than those ranging from dark green through red and black. Blue is perhaps the "easiest" color of all. It is soothing and cool. In one plant, the walls was painted a light blue and it was claimed that the place seemed much cooler to the employees than it really was. This color also reflected light satisfactorily. All danger spots were painted red, that is, with the opposite color from blue and it was found that there were fewer accidents.

Getting Advice on Lighting

If any user of light needs advice, he can usually obtain it from his local electric lighting company. It is profitable to have enough light so no local lighting is necessary. Work always slows up when the amount of light is reduced. It speeds up when the amount of light is increased. Data on lighting, which has been collected, indicates that it is virtually impossible to use too much light where people are working. All the facts I have been able to gather on lighting over a period of thirty years indicate that the more light used the more work will be done under that light and that this additional work almost always pays a dividend on the cost of the additional light. Naturally, no plants have been lighted to a greater intensity than the outdoor light on a bright summer day. Some however, have begun to approach this degree of light.

Lighting Facilities

To-day, it is possible, not only to light working space brilliantly, but there is greater control over the color than has been the case in the past. Lighting units can be made up which contain tungsten bulbs, and the gas filled lamps such as neon, mercury vapor, the new fluorescent lamps, and a combination worked out that will give exactly the color desired. Obviously, in any work where it is important to compare or match colors, the color of the light is important. Daylight effects can be obtained, if desired. The large electrical manufacturing companies have had a great deal of experience during the past ten years in making up lighting units which will give the color values needed.

I find there is not a great difference of opinion among experts on light and paint. The layout that proves the most economical is, of course, that which, in the case of the average job, means the shortest possible distance traveled from the making out of the orders in the office to the finished job in the shipping room. Since the average job one printer does may require a different routing from the average job done by another printer, the first step is to determine what the average job is.

Planning the Layout

In one printing plant that prints some magazines, the big press is at one end and the imposing stone is at the other. The composing machines are in another corner. If all these were grouped closer together in this plant, there would be a marked saving of steps and work could be done quicker and somewhat faster. For the magazine work, the forms have to be trucked the entire length of the shop and as the office is in the center at one side, they must be trucked around the office. In fact, the distance from the imposing stone to the press is about as great as it could be made.

Obviously, it would tend toward a more efficient plant if this layout was changed. On the other hand, if the large press was idle a good part of the time and the job presses were in operation all the time, making the change might not prove so satisfactory. A certain amount of study of the classes of work done, therefore, is in order before making any change in layout.

(*Continued on Page 98*)

*Distribution Engineer, Central Valley, New York

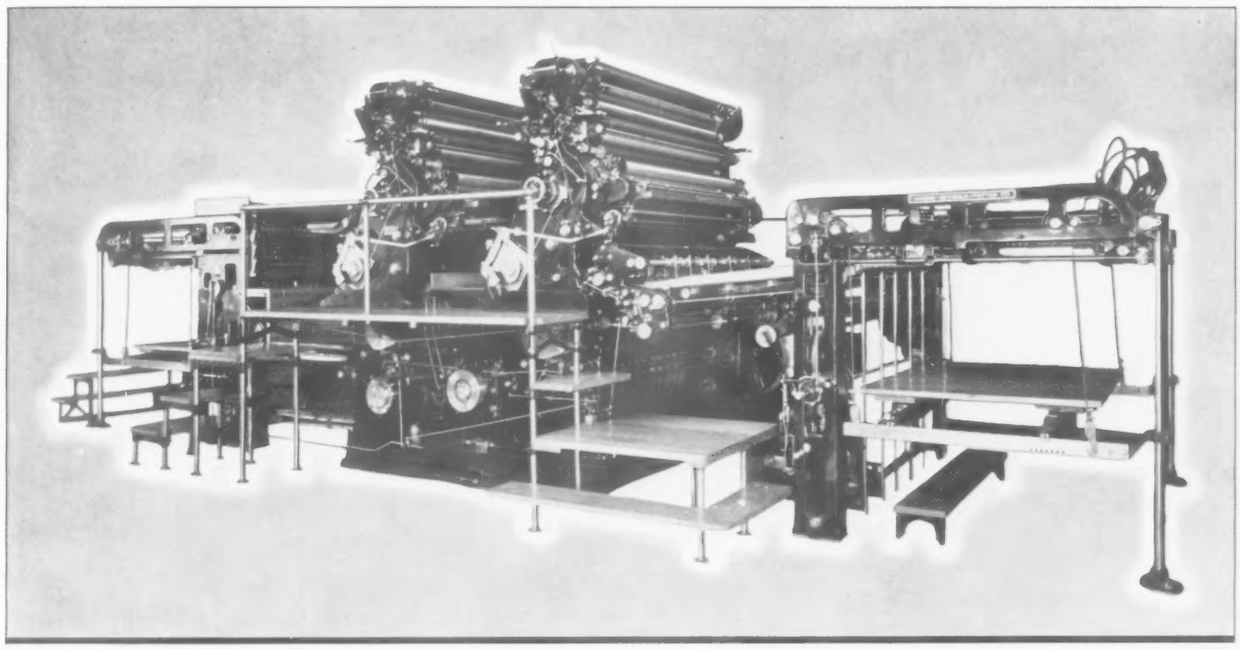
Dr. Arthur Hardy Receives Award

IN MAY, the Edward Longstreth Medal was awarded by the Franklin Institute to Arthur C. Hardy, inventor of the recording spectrophotometer. This instrument found its first commercial applications in the field of the Graphic Arts, where it has helped to establish more accurate standards of color measurement.

The first commercial recording spectrophotometer was installed three years ago at the Research Laboratories of International Printing Ink, where Professor Hardy is a member of the consulting staff. Since that time, the spectrophotometer has been applied to a variety of problems affecting color advertising, color printing, color lithography, and paper manufacturing. Several pigment manufacturers and three or four paper companies now have spectrophotometers. The Institute of Paper Chemistry uses spectophotometric color standards, as does the United States Bureau of Printing and Engraving, and the United States Bureau of Standards.

The recording spectrophotometer operate by means of a complex photoelectric system, which matches and measures color much more accurately than does the human eye. The instrument charts automatically on graph paper the characteristics of any color in terms of the light reflectance properties for each hue of the spectrum. These graphs provide an analysis which is useful in making color matches or in preserving color standards over long periods of time. By comparing the graph charts, the most precise color matches may be obtained. A spectrophotometric color measurement takes about two minutes.

The Offset Press Built by Offset Craftsmen



• Back of every Harris Offset Press is the combined experience of craftsmen who have lived and worked in all the stages of development of Offset as a method. They design and build today precision equipment with thorough understanding of both press-room and equipment. The pressmen and the builders of Harris Offset equipment are kindred: they are all craftsmen. More than that, they are Offset craftsmen. Harris Offset Presses are built by and for Offset Craftsmen.

LITHO-CHEMICALS

Through research Harris has developed and standardized new chemicals for both deep etch and surface plate making processes. Full details upon request. Write us with reference to your lithographic problems.

OFFSET IS THE MODERN METHOD

HARRIS · SEYBOLD · POTTER · COMPANY

General Offices: 4510 E. 71st Street, Cleveland, Ohio. • *Harris Sales Offices:* New York, 330 W. 42nd Street; Chicago, 343 S. Dearborn Street; Dayton, 819 Washington Street; San Francisco, 420 Market Street. • *Factories:* Cleveland, Dayton

PIONEER BUILDERS OF SUCCESSFUL OFFSET PRESSES

Altering Newspaper Press for Narrow Roll Width on Tampa (Fla.) Daily Times

By DERRILL S. HART*

AT A TIME when so many newspapers are changing mechanical equipment to use narrower width paper rolls, adding another newspaper to the list is no longer a novelty. But there will always be interest in ways of preparing for narrow margins, reworking of outstanding presses and other machinery in each plant. While some problems may be easily solved in one plant, in another they may challenge the ingenuity of the entire production organization.

Fortunately, in spite of the many details necessary in changing to a roll an inch and a half narrower, no outstanding problems were encountered in the plant of the Tampa *Times*, and the change was made without difficulty. The changeover date was set at April 3 and the beginning of the work was some six or eight weeks before that time.

Derrill S. Hart, Pressroom Foreman, Tampa (Fla.) Daily Times, *tells how Duplex twin sextuple press was altered to accept narrower plates for reduced roll widths.*

We like to think that the changeover was made so smoothly because of advance preparations. So far as the pressroom was concerned, our first problem was to find out what had been done in other pressrooms. We were fortunate in finding several with similar problems to ours. We also submitted some of our problems to the engineering department of the manufacturer of our press.

We also learned early that no exact set of duplicate conditions could be hoped for in other plants and a great many of our problems would have to be worked out in our own pressroom by our own personnel.

Four point column rule and narrow margins are by no means new. The Louisville *Courier-Journal* has been using 4 pt. column rules and a 7/16 in. margin for more than ten years. Narrow margins and 4 pt. rules such as are now in use on the Tampa *Times* results in conservation of newsprint which is continuous and cumulative.

The pressroom equipment at the Tampa *Daily Times* consists of a 96-page Duplex twin sextuple, maximum speed of 36,000 per hour. Power required is two 100 h.p. motors and two 7½ h.p. motors, the latter used for slow motion and inching. It has two control boards and both can be synchronized so both motors can be operated as one unit.

In checking up to see what would happen with narrower plates, we first found the clips lacked sufficient adjustment range to lock up on the narrow plates. To remedy this, the shoulders would have to be cut ¾ in. on each end of each cylinder. We did the work with a lathe tool, using the press power to turn the cylinder.

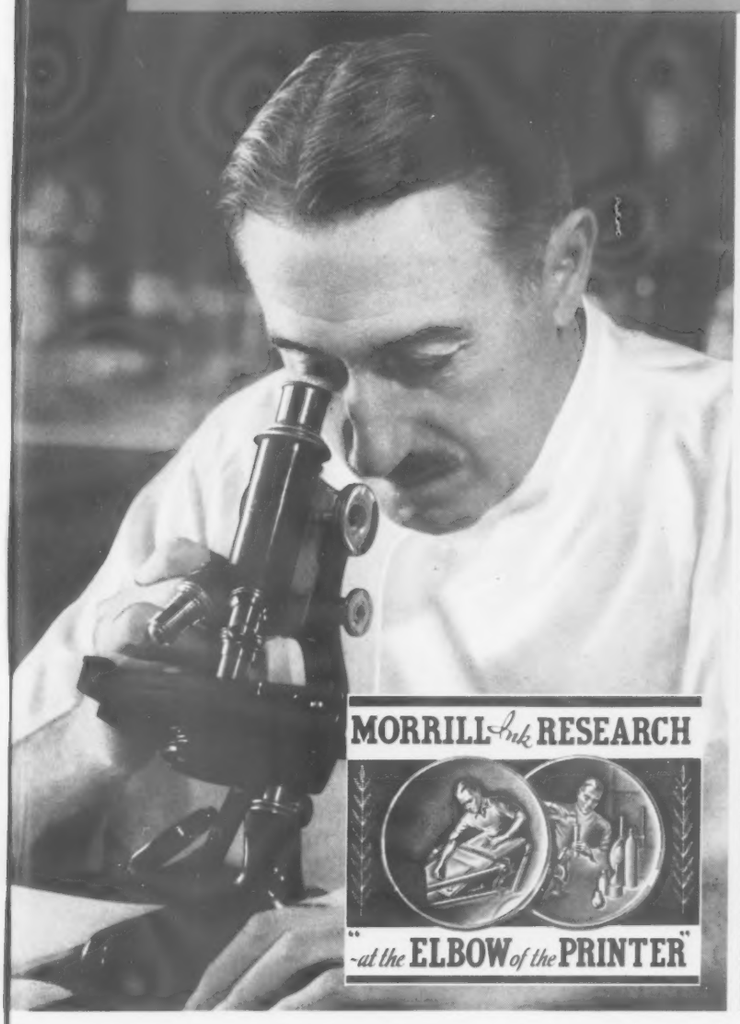
We obtained a regular lathe tool post complete with slide and screw feed adjustment. This was mounted on a steel frame made with angle iron. The top piece was a 6 in. I-beam, its length the same as the cylinders. Any other piece of heavy steel such as a piece of angle iron would do as well. To this I-beam we bolted legs of angle iron which in turn were fastened under bolts at the foot of the press. This provided solid and rigid support to the cutting tool. The supporting bracket was made to fit existing bolts on the press so it was not necessary to make new holes in the press. In addition the bracket could be moved from unit to unit.

(Continued on Page 96)

In the pressroom of the Tampa Daily Times, *machinist's lathe tool post with slide and screw feed adjustment was mounted on a 6 in. I-beam fixture running the length of the press cylinders to provide solid and rigid support for the ¾ in. high-speed steel cutting tool used to cut ¾ in. from each end of the plate cylinders to permit additional clip adjustment range when narrower stereotype plates were put on the press. Work was done right on the press, the cylinders running under their own power. Proper depth was reached in three cuts. Twelve plate cylinders were altered in this manner. The supporting bracket for the fixture was drilled to fit existing holes in the press frame so the fixture could be moved from unit to unit.*

*Pressroom Foreman, Tampa, (Fla.) Daily Times.

99 Years of "Know-How" Simplify the LEGIBILITY PROBLEM



MORRILL Ink RESEARCH

"at the **ELBOW** *of the* **PRINTER"**

MORRILL Ink SERVICE

on-the-Job **COOPERATION**

NEWSPAPERS that read easily, sell easily—sparkling text and colorful halftones help mightily to boost circulation and advertising volume.

Morrill Inks quickly prove the money value of clean, legible printing that looks alive and meets the eye half-way.

Literally "at the elbow of the printer" stands Morrill's accumulated skill and research...99 years of "know how"...a vast storehouse of ink-engineering knowledge in which Science looks at ink from the practical angle of the working pressman.

Morrill Inks are virile, decisive; they flow smoothly and uniformly ...cover fully...leave no blurred or ragged edges even at highest press speeds; Morrill Inks absorb quickly without smudging or fading...they give full tone value and sharp contrast.

Let the Morrill Service Man tell you about Morrill newspaper blacks and colors.

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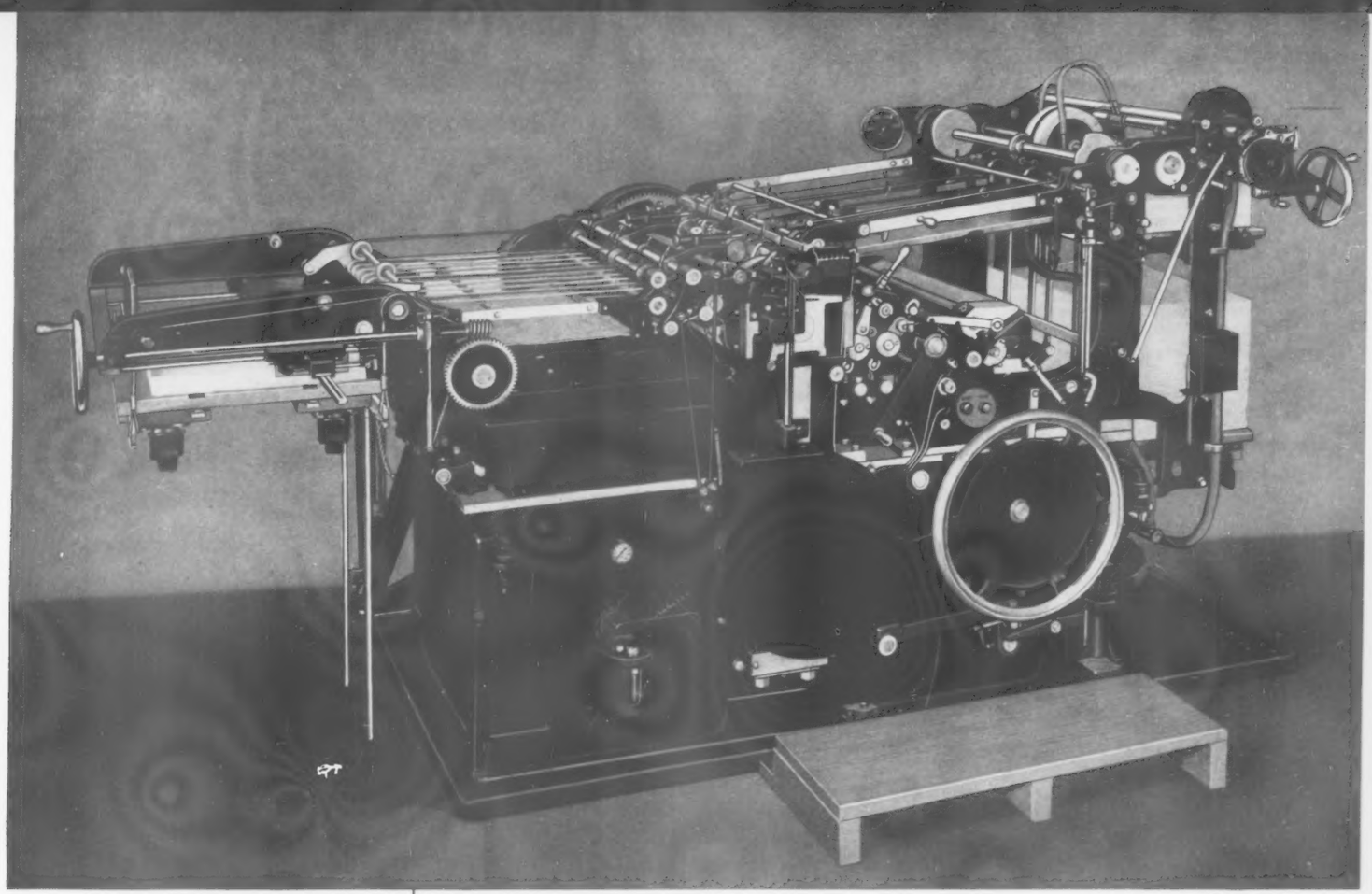
Inks BY MORRILL

Leadership in **VOLUME** *through Leadership in* **VALUE**

THANKS FOR GIVING THE NEW KELLY CLIPPER SUCH A HEARTY WELCOME...

BUT... REMEMBER THE ATF 17×22 KELLY!

Remember the ATF 17x22 Kelly if you want to weed out obsolete machinery and modernize your plant for high-speed, low-cost production. Remember that printers everywhere are making money with 17x22's...that these presses are easier to keep busy because most commercial jobs fall in the 17x22 inch size range. Remember to see your ATF Salesman and ask him to show you the latest 17x22 press sheet. Remember...the next time he calls!



THE ATF 17×22 KELLY

SPECIFICATIONS

Standard sheet	17x22 in.
Oversize sheet	17½x22½ in.
Smallest sheet	7x10 in.
Inside chase size	19¼x22⅝ in.
Type bed size	21⅝x25 in.
Roller coverage (2 rollers)	17¼ in.
Lightest stock	Onionskin
Heaviest stock	.028 in.
Feeder capacity (About 5800 sheets of average stock)	24½ in.
Delivery capacity (About 7100 sheets of average stock)	30 in.
Speed range	2800 to 4200 per hour
Floor space (Open)	6 ft. 4 in. x 11 ft. 5 in.
(Closed)	4 ft. 9 in. x 10 ft.
Horsepower to drive	3
Net weight 6150 lbs.	*Motored by Kimble*

UNITED TYPOTHETAE OF AMERICA UTA
GRAPHIC ARTS EXPOSITION
EXHIBITOR
NEW YORK SEPT 25 TO OCT 7 1939 BOTH INCLUSIVE

AMERICAN TYPE FOUNDERS

200 Elmora Avenue, Elizabeth, N. J. • Branches in 23 Principal Cities

Types used: Balloon Light and Bold, Stymie Family

Paper Problems

By Letter P. Offgrav*

Paper for Printing Aluminum Inks

How should enamels and label paper be specified to get a single printing of aluminum inks to give good results, etc.?

IF enamel and label papers are to be printed with a single impression of aluminum ink, the fact should be stated on the order for paper. Most enamel papers will work satisfactorily with metallic inks, provided the ink fits the paper. The characteristics that affect the lay of metallic inks can be controlled to a considerable extent by the papermaker, provided he knows in advance that such inks are to be used.

It has been found that in some cases printers expect a metallic ink to work on any kind of paper. This is not correct. There are many kinds of metallic inks, just as there are many black inks. If the best results are to be gotten, the ink maker should be given a sample of the paper so that he can make the varnish of the metallic ink fit the sheet.

Varnishing Label Papers

When a label paper is to be spirit varnished and a white stock is expected after varnishing, what specifications should be given the mill?

THE papermaker should be informed that the labels are to be spirit varnished and that a considerable portion of the varnished area will be blank stock. A sample for color should be agreed upon before the paper is made. Naturally, this should be as white as possible. If the printer has no sample that is satisfactory it is probable that the mill can furnish one from its stock papers that will be satisfactory.

Once the papermaker has the above information and sample he can produce a sheet of the required color and which can be varnished satisfactorily. This ends the papermaker's responsibility. However, if the printer wants white stock after varnishing, he should pay fully as much attention to the varnish as to the paper. All spirit varnishes darken white paper to some extent, but some discolor it much more than others. Hence, the necessity of obtaining not only the right paper, but also the right varnish.

**Another in a series in response to problems propounded by mechanical and production executives in a questionnaire sent out by* Printing Equipment Engineer. *Mr. Offgrav will reply to additional problems in future issues.*

Books

Received

Rochester Clinics Report

PUBLISHED in 5 in. by 8 in. size and consisting of 64 pages, the report of the Newspaper Mechanical Research Conference held at Rochester Athaenaeum and Mechanics Institute last February, presents complete proceedings of the 21 clinics. The clinic reports are written in direct question and answer form, *i.e.*, for each subject taken up at each clinic there is a direct answer which represents the collective opinion of those attending the clinics. It is possible that future Research Conferences held by the New York State Publishers Association with the cooperation of the Mechanics Institute, in addition to taking up new problems, may wish to revise some of the conclusions reached at the 1939 meeting.

The Report constitutes a technical reference book consisting of recommended conclusions in answer to mechanical and production problems in the newspaper plant. It is important to note that while all of the answers may not be 100% perfect, yet the conclusions reached are definite so far as it is possible to make them definite. In this respect those responsible for the conduct of the conference and publication of the printed report have performed a real service to mechanical and production executive members of the New York Association. They are to be congratulated.

Meet New Executive

At Right

Get acquainted with Harold Dowse, who has been appointed composing room foreman of the Albany, (N.Y.) Knickerbocker News *by Mechanical Superintendent Eugene D. Jagareski. Appointment was effective May 3rd. Mr. Dowse has been associated for past 15 years with The Press Company. In 1916 Mr. Dowse was employed by the Albany* Journal; *later he worked in New York and other Albany plants. He has been an active member of Albany Typographical Union. He was one of the delegates to the International convention in Birmingham in 1938. He is 39 years of age, is married, lives at 335 New Scotland Ave., Albany.*

Stands out like a NEON SIGN ON A SILO

THE superiority of Champion Paper is attested by the quality and the quantity of letterpress and offset printing done on its many grades. Advertisers, printers and publishers require over 1,500,000 pounds daily—finest enamels, uncoated book, offset, boards, postcard, envelope paper, and all the rest.

Champion's complete line meets your requirements for customers who demand the finest printing that money can buy, as well as those small buyers whose very existence depends upon attractive and productive advertising at low cost.

Whatever the nature of your next printing job, make it stand out with the outstanding quality of Champion Paper, the foundation for good printing.

THE CHAMPION PAPER AND FIBRE CO., Hamilton, Ohio

MILLS AT HAMILTON, OHIO . . . CANTON, N. C. . . . HOUSTON, TEXAS

Manufacturers of Advertisers' and Publishers' Coated and Uncoated Papers, Cardboards, Bonds, Envelope and Tablet Writing . . . Over 1,500,000 Pounds a Day

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Survey

Reveals need for modernization of electrical systems in printing plants—Lighting, too, defective in many printing plants.

By FRED MERISH

DURING a recent survey covering New England and the middle Atlantic states, we found that many printing plants were operating with faulty electrical systems. Some plants visited had been using the same wiring layout for years although plant additions had been built from time to time or other changes made to construction. In all cases, it would have cost less to redesign the existing systems, eliminating the patchwork of wire, cables, conduits and distributing units that had been thrown together hit-or-miss to meet expanding plant conditions. Current expenses in these plants were high because heat losses from wires and cables were high. Heat loss saps energy that should reach machines and other consuming equipment. The more copper used in wire and cable, the less the lines are heated, the less the energy loss, so it pays to use conductors of ample fitness. Manufacturers of wire and cable have made many improvements to their products in recent years, which guarantee economical and uninterrupted operation. Too few printing plants are making use of these improved materials.

Twinned with energy loss due to inadequate wiring, we received many reports of voltage drop, which slowed down machine operation, increased production costs, caused tie-ups in the flow of work—all hidden losses that do not appear on the profit and loss statement, hence, are usually overlooked. After modernizing the electric circuits, the few plants where this had been done, reported reductions in insurance rates and increased safety for workers, thus plugging up two other profit leaks caused by Model T electrical systems.

In general, an electric system may be subdivided into:

1.—Source of energy—power generated within the plant or by a central station system.
2.—Conductors of energy—wire and cable.
3.—Protectors of energy—circuit-breakers, fuses, lightning arresters, etc.
4.—Controllers of energy—panel boards, switchboards, switching devices, transformers, motor controls, etc.
5.—Consumers of energy—motors, processing units, lights, signals, fire alarms, etc.

In many plants contacted in our field work, we heard complaints of high cost of electric current, only to find, after inspection, that units under all of the foregoing subdivisions were faulty, antiquated or thrown together haphazardly. In some cases, the plants had been modernized with expensive electrical equipment but retained the old electric circuits "as is." Instead of saving money on such modernization, these plants were losing more than before, because the increased efficiency of the modernized equipment placed a greater tax upon the antiquated wiring than before. As a result, electric current bills went up, much to the annoyance and surprise of the plant owners.

In a competitive industry, where selling prices cannot be geared too high, plant management with the ability to keep costs down to minimum, has the edge. That management can make it possible to present attractive prices to purchasers and yet show reasonable profits. Electric power expense in many plants may run as high as 4 per cent of production costs, hence, the horse-and-buggy electrical systems inspected on this survey, mean not only bloated production costs, but bloated selling costs, too. Modernization of the electrical system will bring down costs substantially so that more attractive prices can be quoted without endangering profits, thus, making sales resistance less for the sales force and sales volume higher.

Managements reported frequent breakdowns where the electrical systems were inadequate and, too often, they took these disruptions too lightly, too much a matter of course. Breakdowns occurred so often in some plants that management considered them unavoidable—a bad habit to acquire and costly. Too often, we found men and machines idle, waiting for repairs. Disrupted production is a hidden loss, which, when added to excessive electric current expense, may run costs, in some instances, up to 50 per cent or more on the work in process. Repairs and maintenance are high on these inefficient, outmoded electrical systems, another termite to profitable operation. In one plant, certain jobs were being printed for definite delivery dates, but defective cable splices in the electrical systems broke down completely, delaying production so badly that the orders were cancelled, entailing considerable loss.

An adequately wired electrical system can practically eliminate breakdowns and interruptions and will pay for itself in decreased maintenance and increased efficiency. This field study convinces us that printing plants are losing thousands of dollars annually through inadequately wired and antiquated electrical systems. Many breakdowns are quickly adjusted, hence, easily forgotten, but added together over the year, they total a substantial dollar loss. Spoilage is increased, the quality of the product decreased because of faulty electrical systems. In more than one instance, breakdowns were reported of such serious nature that the scrapping of the crazy quilt electrical systems responsible, and replacement with well-designed, modern systems would have been money in pocket, yet, even in such plants, the managements were still using the same badly designed basic layouts with probably a few minor changes or additions here or there, a few switches or cables or a few runs of new wire, in the attempt to minimize "power off." Patchwork of this kind is only too apparent in printing plants if one goes out to spot them.

Frequent arcing of switches, loosening of screws, misadjustments or breakdowns of mechanism, indicated that devious electrical devices in use were old and expensive. Even such a little thing as a fuse costs plenty, if inadequate. In some plants, fuses were burning out too frequently, causing costly delays and substandard output, yet, no attempt had been made to install modern fuses or make other adjustments. In one plant, production was delayed three or four times weekly because of fuse outages, until a circuit breaker was installed and since then this trouble has been eliminated.

Consider insulation when installing cable and wire. It is important and should fit requirements. Heat

For Profits in Printing

The Miehle advertisement shown above appears in the July 1939 issue of Fortune Magazine. It is the opening gun in an extended national advertising campaign dedicated to a better understanding between printers and buyers of printing. This is Miehle's advertising, but more than that, it is the *printer's* advertising . . . because it makes a case for Profits in Printing. Your most important customers and prospects are seeing this advertising, and you can capitalize it to your own great advantage. Write for details on how this may be done.

MIEHLE PRINTING PRESS & MFG. CO.
World's Largest Builder of Printing Presses
14th St. and Damen Ave. Chicago, Illinois

subjects wiring to deterioriation, so do other factors, such as solvents, acids, alkalies, moisture, sunlight, submersion, arcs and other forms of external heat. The insulation on wires and cables in many plants is deficient, causing breakdowns and expensive adjustments. Brittle, dried-out wire insulation was noticed in many printing plants visited, which soon develops cracks and breaks away where vibration is heavy from machinery. That may mean a short with consequent stoppage to production or even a fire. Many plants should be rewired merely because the insulation is antiquated and inefficient.

At least 70 per cent of the plants visited were below "see level" on lighting. During the past few years, lighting intensities have been stepped up considerably. Existing wiring systems suitable for old intensity levels cannot carry the load necessary for modern intensities. If adequate lighting is to be installed in many plants we inspected, the circuits must be re-wired too. The increase in lighting intensities has paced the production speed-up in industry. Many plants visited are geared to faster production methods with more efficient machinery but lack adequate lighting, consequently, inferior lighting is a drag on output and tends to nullify the efforts of the most modern machines.

Vision must be speeded up with production. Shadows must be eliminated to clarify sight. In one plant, tests showed that under shadowless lighting intensities, workers ordinarily classed as "slow", increased their working speed as much as 40 per cent, whereas, workers with better eye-sight speeded up from 15 to 30 per cent. Better lighting means more economical production, less spoilage, uniform standards, schedule maintenance, fewer accidents, greater accuracy, more satisfied customers, less eye strain on workers, consequently, better morale, bigger net profits.

Before modernizing your electrical system, have a competent survey made. Manufacturers of electrical equipment will aid but since they make a variety of items and since the electrical system is a combination of so many different manufacturers' products, it is better to have an independent electrical engineer or contractor coordinate the various units.

In the printing business, low production costs can follow only when the flow of work from first to last operation continues with a minimum of hold-up and that necessitates the aid of an adequate power and lighting system. The need for dependability is paramount in the printing business. Deadlines must be met. Jobs must be delivered as promised. This industry must lean very heavily upon efficient electrical equipment, yet, in about 75 per cent of the plants inspected on our recent eastern survey, we found the electrical systems below standard, some in part, some entirely horse-and-buggy.

Too many old "jallopees" handle the juice in printing plants. Junk them with profit for streamlined wiring.

Caxton Company's new plant superintendent John W. Knox W. Knox and Pressroom Foreman John Netzel discuss one of the new Kelly Clipper presses recently installed by the Caxton Company as part of its plant expansion program.

Caxton Company Expands

The Caxton Company, printers, in Cleveland, has recently expanded its plant facilities. The offices and mechanical departments on the eighth floor of the Caxton Building have been increased considerably. Offices of the company have been moved to the front of the building. General Manager J. F. Berkes has announced the increase of Caxton personnel by addition of Salesmen Harry W. Averill and J. E. Wilson and Estimator Frank J. Walsh.

Many production and mechanical executives, especially those identified with the Craftsmen's movement, will be pleased to know that John Knox, formerly composing room superintendent, has been elevated to the position of plant superintendent. Mr. Knox served two terms as president of the Cleveland Craftsmen's Club. William Adamson has succeeded Mr. Knox as foreman of the composing room.

The composing room has been practically doubled in area. Pressroom equipment under supervision of Foreman John Netzel, has been augmented by addition of five platen presses, two new Kelly Clippers and two large Kelly presses.

Gibbs is Kemp Representative

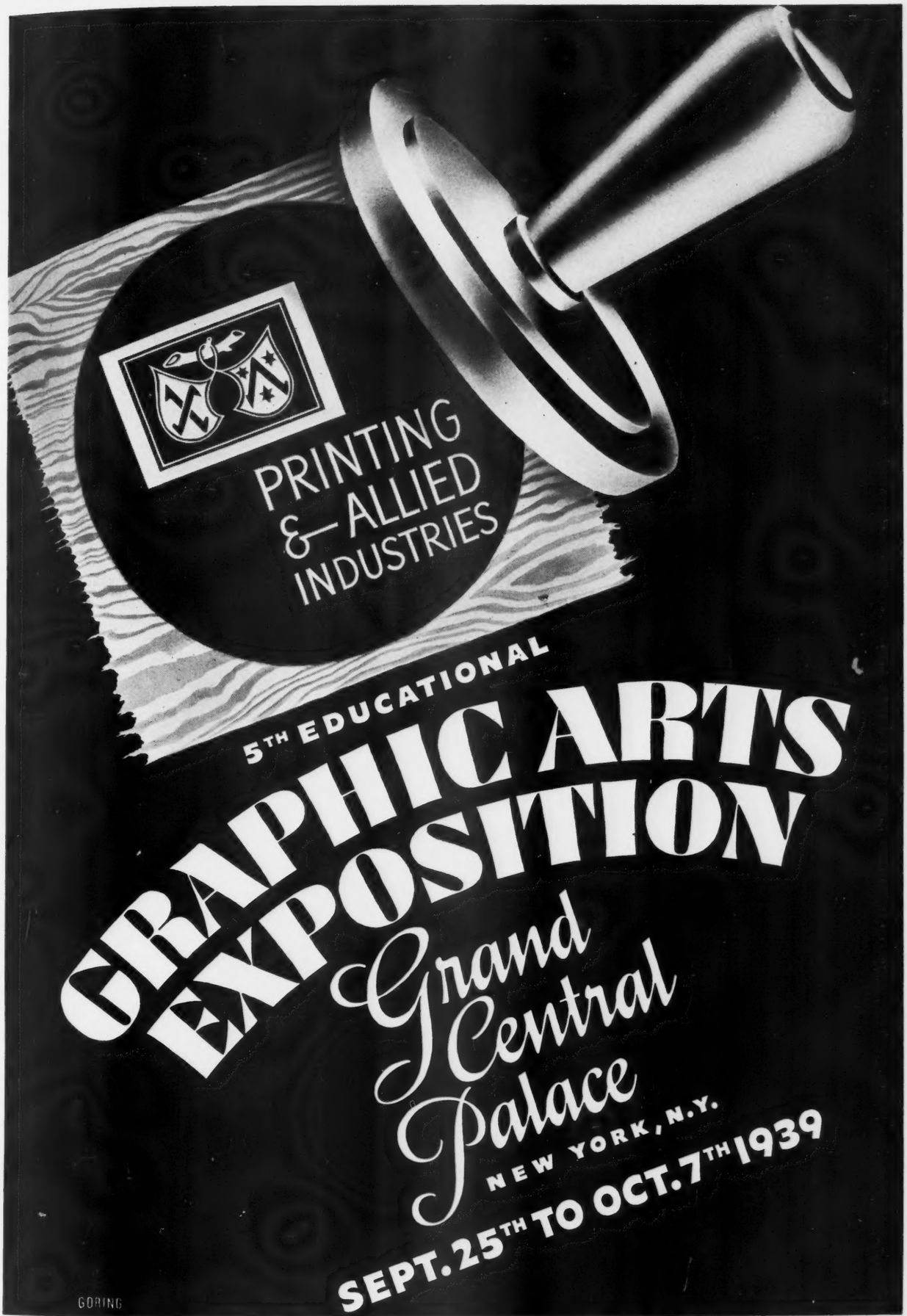
The C. M. Kemp Manufacturing Company, Baltimore, announces the appointment of W. H. Gibbs, 101 North 33rd Street, Philadelphia, as sales representative in Delaware and Eastern Pennsylvania.

Lamp Differs Greatly From Other Types

At first glance, it is stated in Westinghouse's Annual Engineering Progress report, the Westinghouse fluorescent lamp is often taken for another member of the well-known lumiline lamp family. The similarity, however, is one only of appearance; the two are as different as the first incandescent and the arc lamp. The fluorescent lamp has no filament, and uses a principle of light generation several times more efficient than that of the incandescent filament, in which the electric energy is first transformed into heat and then into radiant energy. In the fluorescent lamp, the electric energy creates a discharge across an atmosphere of ionized mercury vapor, between electrodes at opposite ends of a long, slim tube. This discharge is extremely rich in ultraviolet radiation. The inside walls of the tube are coated with special salts, called phosphors, that have the property of transforming ultraviolet energy into visible radiation. Each phosphor has its own characteristic color of radiation. Hence, lamps can be made monochromatic, or, by using combinations of phosphors, any desired color, including white, can be constructed. The different phosphors fortunately do not interfere with each other when used together.

To produce a light of certain color with the fluorescent lamp, the phosphors giving only that color are used. This is producing light by an additive process. This is the important point from an efficiency standpoint. This principle of additive light production and the inherently high efficiency of the phosphors as generators of visible radiation give the following comparative efficiencies of fluorescence over incandescence: Blue, 60 times; green, 210; red, 5; white, approximately twice.

Several facts characterize the fluorescent lamp. It has low surface brightness; it is an extended source; the lamp-wall temperatures are low, barely warm; the lamp requires a ballast or starting transformer, as the starting voltage is higher than the operating voltage.



PRIZE WINNING POSTER IN CONTEST CONDUCTED BY NATIONAL GRAPHIC ARTS EXPOSITIONS, Inc.

Exterior view of handsome new home for the Mt. Vernon (O.) News. The building is of reinforced concrete and steel. Exterior consists of glass block, buff face brick and limestone trim. There are no windows in the air-conditioned structure. While the building is of one-story construction, the basement extends under the full area of the building. Diffused natural daylight is admitted through the glass block walls.

Modern Home

Provided for Mt. Vernon (O.) News—Glass block admits daylight —Departments air-conditioned

THE new home of the Mt. Vernon (O.) *News* was occupied the first part of April by the Republican Publishing Company. The building is located on a lot 68 ft. by 132 ft., and its exterior is of glass block, buff face brick and limestone trim built about steel framework and reinforced concrete. The building is of one-story construction with full size basement. The basement is open on the western and southern sides to provide daylight effect without the use of lighting elements.

A 30 ft. concrete driveway at the rear of the building provides access to the pressroom and mailing department. Access to storage space in the basement is by a concrete corridor extending the length of the basement, so that trucks may enter with paper and ink and to provide access to a concrete ramp leading to a loading platform at the east side of the main floor. A parking lot is located at the rear.

The building is constructed without windows of any kind. All departments are air conditioned. Separate controls enable adjustment to be made in each department.

The forward portion of the main floor is occupied by office spaces. The business office is immediately at the rear of the lobby leading from the main entrance. Publisher Culbertson's offices are at the right-front corner and the advertising offices immediately at the rear. Editor Devalon's office occupies the left-front corner with editorial, teletype and file departments adjacent. All of the offices have been furnished with new fixtures, including gun metal finished, linoleum-topped metal desks and aluminum chairs. The business office counter is of stainless steel.

The Composing Room

The rear half of the main floor of the new building is occupied by the composing room. Its area is 50 ft. by 56 ft. Natural daylight is provided by glass block walls. The only wood used in the building construction is the composing room floor which is wood block. The composing machine equipment consists of five Linotypes (one of them a new Model 32 with six-pocket mold disk) and Ludlow equipment. Forms are made up on trucks. A stereotype mat roller molds the forms as they are delivered from the makeup. The mats are then sent down to the pressroom by means of a chute.

The Pressroom

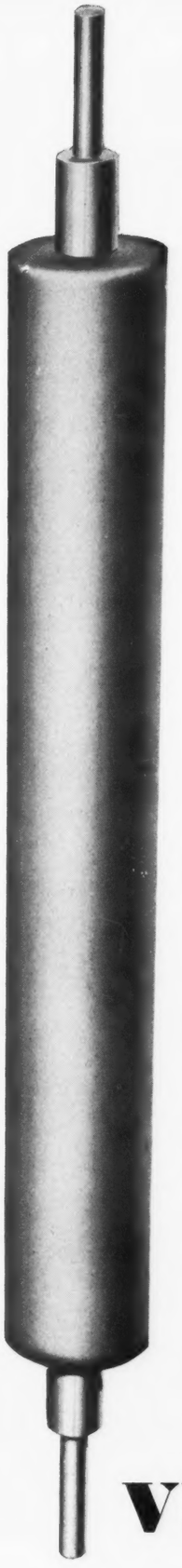
The pressroom occupies an area 30 ft. by 72 ft. As is stated above, three wall areas admit natural daylight. A 16-page Duplex tubular press is used to print the *News*.

Architect M. C. Celli of Rust Engineering Company, Pittsburgh, designed the building. Plans were drawn from original sketches by Manager L. A. Culbertson, who is also secretary-treasurer of the company.

E. E. Culbertson is president of the Republican Publishing Company. George T. Culbertson is vice president and assistant manager. J. E. Devalon is editor.

Upper Left—*View in composing room of the Mt. Vernon (O.) News. The paper is published 6 days each week. A new Model 32 Linotype has been added to the composing machinery.*

Lower Left—*The pressroom in the new plant of the Mt. Vernon (O.) News occupies an area 30 ft. by 72 ft., through two sides of which natural daylight is admitted. The News is printed upon a 16-page Duplex tubular press.*



Another VULCAN *Key to Economy and Better Printing*

VULCAN VULCOLASTIC ROLLERS, like Vulcan Cylinder Packings, have been remarkably successful because they *save money* and at the same time promote *better presswork.*

Vulcolastic Features:

Impervious to inks, driers, solvents, etc. No swelling, no lipping up at the ends. Vulcolastic Rollers are permanently uniform in diameter.

Remarkably soft and easy to set. Constant resetting is wholly unnecessary.

Unaffected by heat, cold, or humidity.

No regrinding necessary, in the ordinary sense of the word. The refinishing of a Vulcolastic Roller is only a polishing job. Only an infinitesimal layer of material is removed.

Splendid inking qualities, and LONG SERVICE.

Write for details and recommendations

VULCAN PROOFING COMPANY, First Avenue and Fifty-Eighth Street
Brooklyn, New York

Sales Representatives in Principal Cities

VULCAN

VULCOLASTIC ROLLERS

Mechanical Executive Delegates to Southern California Mechanical Conference

1—Left to right: James Hammond, newly elected vice president and Charles Medland who will serve in his capacity as secretary-treasurer of the Southern California Mechanical Conference.

2—Some of those serving the Southern California Mechanical Conference in an official capacity; left to right, they are: S. J. Wills, retiring secretary-treasurer; L. L. McFall, retiring president. At right is new president A. F. Stanley, Mechanical Superintendent of the Los Angeles Daily *and* Evening News.

3—Here is what might be called the San Diego delegation . . . Left to right, they are: E. A. Sullivan, San Diego Union *composing room; Kenneth L. Gregg, Production Manager, San Diego* Union Tribune; *W. G. Doriss, Mechanical Superintendent, San Diego* Shopping News; *William T. Schneider, Stereotype Superintendent, San Diego* Union Tribune; *L. H. Hendricks, San Diego* Union *Composing Room Foreman.*

Cooperation

Between newspaper editorial, advertising and mechanical departments keynote of Southern California Mechanical Conference.

By K. L. GREGG*

WITH a record attendance of 162 registered delegates, the Third Southern California Mechanical Conference was held at the Huntington Hotel, Pasadena, California, May 6 and 7. The keynote of the Conference was a plea for closer cooperation between the editorial, advertising and mechanical departments. This thought was expressed not only by the mechanical men who spoke but also by the majority of guest speakers who were: W. L. Blair, managing editor of the Pasadena *Morning Post;* William Shea, editor-publisher Culver City *Star-News* and Harry Webster of San Bernardino who were called upon to pinch hit for William S. Kellogg, president of the California Newspaper Publishers' Association; Neal Van Sooy, editor and publisher, Azusa *Herald;* H. C. Burkheimer, publisher, Alhambra *Post-Advocate,* who substituted for George Morell, Peninsular Newspapers, Inc., Palo Alto; Charles Arnn, advertising director, *Daily and Evening News,* Los Angeles; James Metcalfe, advertising manager, Alhambra *Post-Advocate;* Paul Bell, personnel director, Los Angeles *Times.* Mr. Bell spoke in place of Major A. F. Logan, business manager, Los Angeles *Examiner,* and Miss Edith R. Allen, secretary of the California Newspaper Publishers' Association.

K. L. Gregg, production manager of the San Diego *Union-Tribune,* whose subject was "Co-ordination of the Mechanical Departments" asserted that the business office, the editorial room and the advertising department should give some thought to cooperation, because "after all, our work in the mechanical departments cannot start until they have done their share." Gregg also pointed out that newspapers should be prepared mechanically to accept and handle the increase in requests for color from national and local advertisers.

Mr. Van Sooy gave a very interesting talk on the history of newspapers in California. Charles Arnn, who drew a beautiful word picture of a "brain child" as conceived by an advertiser, or advertising writer, that included expensive art work, engravings, etc., received a good hand when he pointed out what happens in mechanical departments to some of those "dream children" said, "Everyone knows that you fellows in the composing room wear beautiful rubber heels, but is it always necessary to put your heel trade mark on a proof we hand to the space buyer?"

Mr. Metcalfe also showed his appreciation of mechanical problems when he said that the average printer believes and advertising men follows this set of rules when preparing ad copy:

"1. Never use a typewriter. Copy should be prepared on heavy brown paper with hard pencil.

"2. If prices are shown on both copy and dummy, be sure the prices do not correspond.

**Production Manager, Union-Tribune Publishing Company, San Diego, Calif.*

The mark-up man will know which one goes.

"3. It also helps to turn in illegible copy, particularly on trade names. It is the composing room's business to know what they are.

"4. If the ad is illustrated with cuts, have one or more of them marked 'to come.' It is not necessary to indicate size, kind or style.

"5. Always get copy in late. It is conducive to the best typographic results, besides it keeps the compositor on the jump and tends to discourage loafing on the job.

"6. Finally, never fail to designate the size, measure and type face of each line of each paragraph. The mark-up man should never be allowed to exercise his own judgment."

Various mechanical problems were discussed. Show-through and off-set caused some discussion from the floor and by unanimous vote the organization agreed to point out to advertisers and agencies who persist in furnishing poor reproduction materials (especially mats furnished by certain chain stores) by sending proofs from the poor mats to the president of the conference, who will then, if necessary, take the matter up with the advertisers.

It was agreed that the fall conference would be held in Los Angeles, at which time plans would be laid for a meeting some time next year in San Francisco.

For the first time San Diego was represented by five delegates. Other delegates from distant points were those from Spokane, Washington; San Francisco, Palo Alto and Colton, California.

A. F. Stanley, mechanical superintendent of the Los Angeles *Daily and Evening News* was elected president, succeeding L. L. McFall, superintendent of the San Bernardino *Sun*. James Hammond, mechanical superintendent of the Long Beach *Press-Telegram*, was elected vice president to succeed Mr. Stanley, and Charles Medland, composing room foreman of the Pasadena *Star-News* was named secretary succeeding S. J. Wills, Alhambra *Post-Advocate*. The retiring officers were given a rising vote of thanks for the efficient manner in which they conducted the past three conferences.

Supply companies represented were: California Ink Co., Certified Mats Corp., Federated Metals, General Electric Co., Goss Printing Press Co., Intertype Corp., Ludlow Typograph Co., Mergenthaler Linotype Co., New England Newspaper Supply Co., Powell River Sales Co., Shaw Machine Co., and the Sta-Hi Corp.

Graphic Arts Exposition

As has been announced in previous issues, the Fifth Educational Graphic Arts Exposition will be held at Grand Central Palace, New York, September 25 to October 7. At last report 59 manufacturers of printing equipment and supplies had taken 32,390 sq. ft. of the available 46,409 sq. ft. of floor space. Nearly 100 other firms are negotiating for the remaining display spaces.

President Best Reports—Asserts Printers Are Safe Credit Risks

The total net earnings of the Lanston Monotype Machine Company for the fiscal year ended February 28, 1939, presented in his Annual Report to Stockholders by President Harvey D. Best, amounted to $70,960.09. This is equal to $1.36 per share as compared to $4.25 per share for the previous fiscal year. Taxes of all kinds, including reserves for Federal and State income taxes, amounted to $103,611.15 for the fiscal year, or $2 per share of outstanding stock.

In President Best's annual report for the fiscal year 1935, he pointed out it had been the experience of the Lanston Monotype Machine Company that printers rank very high as safe credit risks. "In support of this statement," writes Mr. Best, "I am happy to say that at the end of the past fiscal year our total of matured notes was $71,598.69, a reduction of 77.7% from the high point of January 1, 1934, at the bottom of the depression."

P-Double-E Filing System systematizes your technical literature file—you can find any folder when you want it.

Cut Filing System

As part of the control system in the Boston *Herald-Traveler*, Production Manager C. W. Govier maintains an advertising cut filing system, by means of which any cut which is to run currently in either the *Herald* (morning) or the *Traveler* (evening), or both, may be located quickly. Cuts which have been used and which are to be filed are deposited in a compact indexed try-cabinet system.

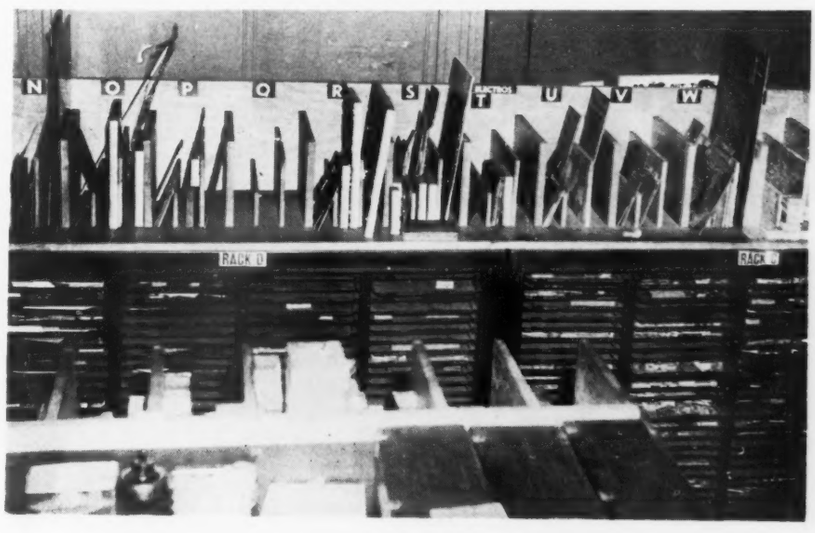
In the illustration is shown a section of the filing system. As is mentioned above, the *Herald* is published in the morning, and the *Traveler* in the evening. This filing system is used for both papers.

The system is divided into three sections. All live electros are deposited in the open compartments on top of the cabinet shown in the rear of the picture. Spaces are provided for 1-2, 3-5 and 6-8 column cuts under each alphabetical compartment—that is, each lettered compartment is divided into three parts. Shown on top of the cabinet at the front is a similar series of compartments for stereos.

Filing electros vertically and in the open has proved to protect them from damage and also serves to make unnecessary large drawers or compartments for them. The weight of these large drawers often causes them to become useless after a short period of use.

When a cut is to be filed, a 3 x 5 card index system is used to carry all information pertinent to the cut and each card indicates in just what tray underneath the cabinet tops the cut is filed. The cards are contained in three wooden boxes with lids hinged on the side. When the lid is lifted, one side of the file box lifts with it, the side being hinged to the lid, to expose the top and one side of the card file for easy access. The cards are filed alphabetically.

In the *Herald-Traveler* composing room, the services of one man are required to keep the card records up-to-date, keep all cuts filed properly, and to issue or receive cuts upon order. This man also dispatches to the Stereotype Department or the Engraving Room all national advertising mats or plates and lists them properly so that the national advertising is handled in a department entirely familiar with the requirements.



View of section of advertising cut filing system in composing room of the Boston Herald-Traveler. *This composing room operates seven days per week, for the morning* Herald *and six days per week for the evening* Traveler. *In the compartments at the rear on top of the cabinet are filed temporarily electros which may run in both papers or may repeat run in either or both papers. Stereos are filed in the open compartments in the cabinet in front. The lower part of the cabinets in the rear contain cuts for advertisers which have been filed for possible future use. In the three boxes, shown lower-front-right, are contained 3 by 5 cards upon which is put all information pertinent to the cut and in just which tray it may be found in the lower sections of the cabinet at the rear. One man is engaged full time in keeping the system and all work pertaining to it in apple-pie order.*

Combating Static Electricity

A GROUP of pressmen were recently discussing ways of combating static electricity, a trouble quite common in the pressroom and bindery. One recalled the perforated pipes on the cross bars which sprayed live steam on the sheets as they were carried to the delivery and what a sight it was when this device was in use on many presses in a large pressroom. Another pointed out that the gas sheet heater is preferred by many under the belief that the water in gas affords a natural ground for the static. The empirical theory that static may at times be decreased by running the shorter dimension instead of the longer dimension of the sheet to the grippers and vice versa had its supporters.

One old-timer said that after getting rattled and losing his head a number of times because of static in his apprentice days he tried an experiment. When he placed a lift on the feedboard one day he had trouble in getting the top sheet down to the guides because of static. On previous runs he had noticed that static had decreased from the top of the pile down. So he placed the top sheet back on the pile. Next he picked two sheets from the top of the pile and drew them in spite of static across the feedboard to the guides and then replaced the two sheets on top of the pile. Then he picked three sheets from the top of the pile, fed them to the guides and replaced them on top of the pile and so on until he had dragged six sheets together across the board to the guides and had returned them to the pile. Noting that this batch had less resistance to drag he concluded that static was diminishing and next tried feeding a single sheet and was agreeably surprised to find that it and succeeding sheets could be fed because the static was diminishing with the height of the pile. Subsequent experiences convinced him that static does diminish with the height of the pile and that static seems to be strongest near the top of the pile and if the static in the half-dozen top sheets is grounded, the remaining sheets will show slight evidence of static.

Together with the application of glycerin to all parts which the sheet touches on press or folder, the old-timer's device is the best make-shift for combating static, aside from the scientific devices in use.

18th Annual Printing Education Conference

FORTY speakers, leaders in education and industry will take part in the Eighteenth Annual Conference on Printing Education, sponsored by The National Graphic Arts Education Guild, to be held at Columbia University, New York City, June 24-29, 1939. In addition, at one of the Conference sessions, some twenty representatives of the Advisory Council on Education for the Graphic Arts, Harry L. Gage, chairman, will conduct a symposium on "Industries' Cooperation with Graphic Arts Education." The latter will serve in giving the printing teachers of the United States and Canada a comprehensive view of new developments in the Graphic Arts. An extensive entertainment program has been arranged providing for visits to the New York World's Fair, to Goudy's Village Press at Marlboro-on-the-Hudson, to West Point, to printing establishments and to other points of interest in New York City. An attractive sightseeing program has been planned also for ladies.

Among the labor and industry leaders listed on the program are: Thomas R. Jones, President of American Type Founders and President of the National Printing Equipment Association; Frederic W. Goudy, Type Designer; George H. Carter, Lanston Monotype Machine Company, former Public Printer; George Meany, President New York Federation of Labor; Betty A. Hawley, Executive Secretary, The Advisory Board on Industrial Education, New York City, and vice president, New York Federation of Labor; Elmer J. Koch, Secretary, United Typothetae of America; Don H. Taylor, Executive Vice President, New York Employing Printers Association; O. Alfred Dickman, Advertising Manager, New York Herald Tribune; William H. Friedman, Carey Press Corporation; and John A. Wilkins, Vice President, The Charles Francis Press, New York City.

Leading printing teachers from all parts of the country will also be among the speakers. One session will be devoted to the National Student Graphic Arts Society, the honor Society of the National Graphic Arts Education Guild. The annual banquet will be held on Tuesday evening June 27 at the Faculty Club, Columbia University, with Harry L. Gage, Vice President Mergenthaler Linotype Company, as the toastmaster.

The Printing Teachers Guild of New York City, numbering about 100 teachers of the city, George H. Bennett, The New York School of Printing, president, will be the host of the conference. The general arrangements are in charge of the officers and directors of the National Graphic Arts Education Guild.

Clutch Buffer Facing Device

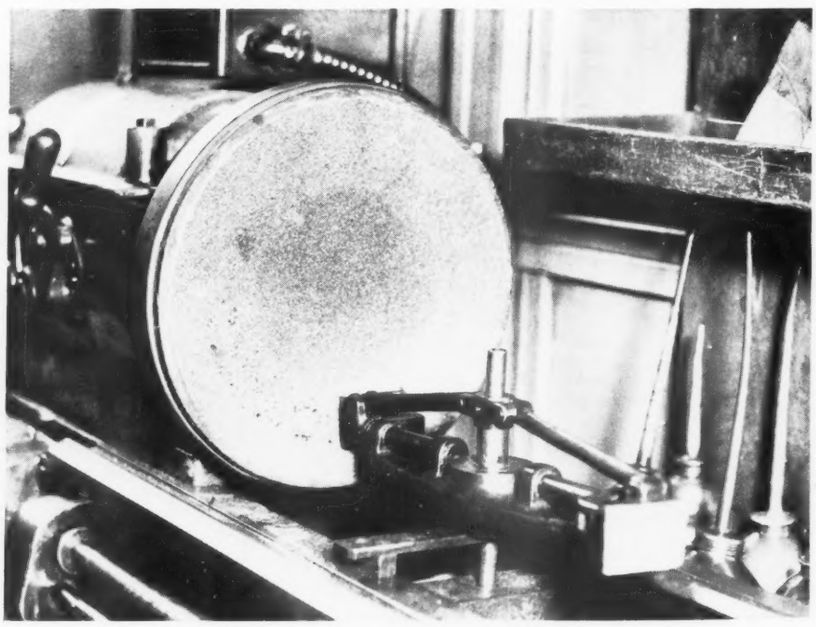
Many line-casting machinists have difficulty in maintaining equi-distant relationship of the driving clutch buffers (leathers) as measured from the gripping surface of the leather to the axis of the driving shaft.

If you are equipped with or have access to a lathe of sufficient size in your plant, you may solve this problem as did Chief Composing Room Machinist James Hubbard of the Boston *Herald-Traveler*. Mr. Hubbard made a device consisting of two main parts, a sanding disk and a fixture upon which to mount the arm.

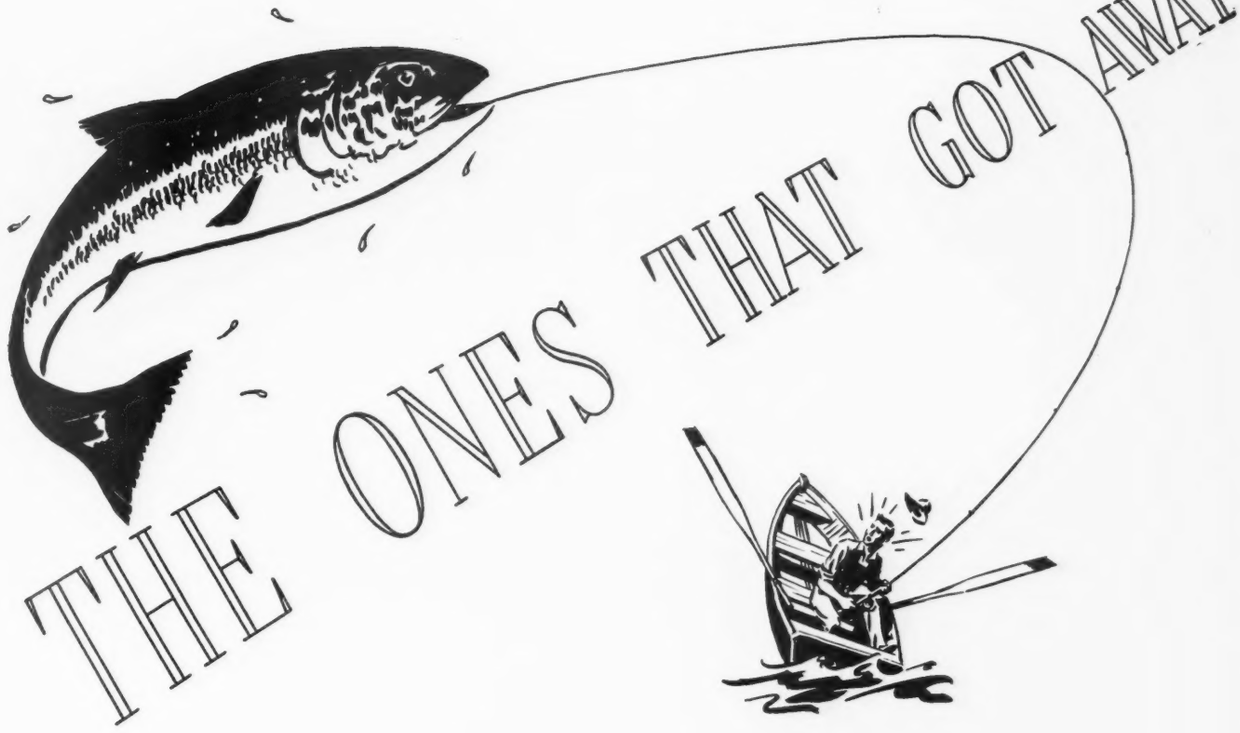
The lathe in the *Herald-Traveler* machinist department has a 9 in. swing. To an 18 in. face plate, Mr. Hubbard cemented a coarse grained carborundum disk. The plate is mounted in the head stock of the lathe in the regular manner.

The fixture for holding the clutch arm in position is mounted on the tool carriage after the block has been removed. When the clutch arm is placed on the fixture, the links and collar are in approximately the position as when the clutch arm is attached to a machine in action with the buffers gripping the inside rim of the clutch pulley.

When the buffers are to be faced by the revolving disk, the clutch arm is rotated by hand upon the fixture until both buffer clutching surfaces are equi-distant from the center of the clutch arm. The tool carriage operating crank is used to move the leather buffers against the abrasive disk.



View of friction clutch buffer facing device attached to lathe in composing room of the Boston Herald-Traveler. *Through its use both buffers on the clutch arm may be made equi-distant from the axis of the clutch shaft.*



ALL FISHERMEN have alibis for "the ones that got away." Even if they land a ten-pounder, they insist on talking about the ones they DIDN'T get which were "twice as big." They'll tell you that the line snapped . . . or the boat rocked . . . or something happened to the hook . . . but YOU know that they just weren't good enough fishermen to land the "whoppers." Either they didn't have enough skill . . . or THEY WERE TAKEN BY SURPRISE WHEN THE BITE CAME!

Just as fishermen have to be ready for the big fellows, YOU have to be all set to go when a customer comes in with a big rush order . . . and many a printer has lost a job because he didn't find out until the last minute that his rollers were in need of replacement. Change in weather conditions or improper care may have reduced roller efficiency . . . and rush orders won't wait until you can get delivery on a new set!

Don't put yourself in the spot where you have to tell "fish stories" about the orders "that got away." Check your rollers NOW . . . and get set with BINGHAM, the leading manufacturer of ALL KINDS of printers' rollers. Whether your roller needs call for COMPOSITION, RUBBER or VULCANIZED OIL, you'll find that scientific knowledge, experience and the modern efficiency of its SIXTEEN FACTORIES enable BINGHAM to sell MORE for LESS.

SIXTEEN BINGHAM FACTORIES

CHICAGO
ATLANTA
CLEVELAND
NASHVILLE
DES MOINES
DALLAS
DETROIT
HOUSTON
INDIANAPOLIS
KALAMAZOO
KANSAS CITY
ST. LOUIS
OKLAHOMA CITY
MINNEAPOLIS
SPRINGFIELD, O.
PITTSBURGH

SAM'L BINGHAM'S SON MFG. CO.

Manufacturers of Printers' and Litho-Offset Rollers

Damage

To line-casting machine distributor box and second elevator bars caused by maladjustment and careless machine handling.

By C. S. KELLEY*

MANY line-casting machine second elevator and distributor box bars are damaged yearly in such a way as to render them unfit for further use. In many cases proper care in handling the machine would lengthen their normal life considerably. A major factor, especially with reference to damage to the "meeting ends" of both bars is the jerky motion with which operators open the controlling lever to start the machine after stopping it with the second elevator between the transfer clearance and its seat at normal position. This action causes the second elevator head bearing a matrix line to tilt out of position by reason of the sudden starting motion with the result that the starting spring stress is overcome by the weight of the elevator head or the head and bar pivot about the hinge pin to throw the second elevator bar out of alignment with the distributor box bar.

In the list below will be enumerated the principal causes and remedies for damage to the bars.

Controlling Colors

Previous to the execution of color work, advised Christian Steidenger of the Steidenger Color Press, before the New York Young Printing Executives' Club recently, study the progressive proofs under the glass before you start. Make sure that the colors are right before starting and you will avoid many a headache and unprofitable job. Sometimes a shift in rotation of colors will achieve the result when confronted by the problem of mixed forms. When the forms consist of originals, electros, type, minus patent base and plates tilted at all angles (the black form being the key form) it is absolutely impossible to get a good job if it be necessary to lock and unlock the form in moving black plates during the run when yellow, red, or any two or three colors are run first, regardless of how careful you are in running strike sheets. When running black first, the shade of succeeding process colors must be changed to get the same results as the proofs supplied, if yellow, red and blue are first, with black the third or last color as the case may be. If the printer has no experience along these lines, it is best to consult the ink house. Their technical men will be glad to help you.

The Distributor Box Bar

Except on the tip or matrix separating point, wear on the distributor box bar normally is negligible. After a long period of time, the vertical faces of the box rails will wear. This increases the space between the vertical faces of the rails and the bar point so that two thin matrices (like two "quote" matrices or succeeding thin matrices like period and comma) will be raised together by the box lift. In many cases, this wear is not sufficient to warrant replacing the rails with a new set. This point can usually be stretched by annealing the point, piening it a little to take up the rail wear and then hardening this point again by heating and water dipping.

The distributor box bar usually is damaged by the second elevator bar failing to align with it when the second elevator brings the second elevator bar up to normal position to transfer the line of matrices to the box. This smashes the rib or rail on the forward side and bends or breaks the lower rail.

Many times operators or machinists have had cause to wonder what caused the big nick on the lower rail of the distributor box bar. This is caused by the screw in the distributor shifter slide buffer shank coming loose, when the shifter moves outwardly previous to transferring the matrix line from the second elevator to distributor box bar, the buffer remains in the distributor box and is wedged there by the following line or by the shifter itself. This nick is not discovered until some time later when the distributor box bar is removed from the box for cleaning or inspection.

Serious wear on the distributor box bar can be brought about by applying the wrong distributor box rails. Distributor box rails, such as (Linotype G1480), are designed for use only with distributor box bars having long bar points for separating display matrices. When used with distributor box bars having short bar points, the rails raise the matrices slightly before they are beyond the end of the teeth. This forces the teeth upwardly on the bar. Needless to say, the misfit parts combination is hard on the matrix teeth.

Second Elevator Bar

By reason of its activity in the operation of the line-casting machine, it is important that close attention be paid to handling the machine properly by the operator and that the machinist keeps the second elevator in good condition. Matrix life is dependent upon its good maintenance. There is nothing particularly difficult about the maintenance of a second elevator—most of the trouble is caused by misadjustment and crude handling of the machine.

The following points in the maintenance of the second elevator are important:

(1) Right-hand end strikes distributor box bar:

When the machine is stopped with the second elevator about to be returned to normal position opposite the distributor box the starting lever should be eased out. Opening it suddenly is likely to throw the bar and plate assemblage out of balance on its pivot, the motion being an arc of a circle which will jam the bars.

The second elevator starting spring on the Linotype should not be used when it has lost its tension or is broken. The reason is obvious.

The second elevator cam, particularly the lobe or rise which raises the second elevator from transfer position to the distributor box, must be smooth and of true curvature. After a long period of use (several years), the cam surface will become wavy. The irregular motion imparted to the elevator will cause the head to swing. File out carefully the waves which cause the second elevator to travel up in a series of jumps to restore true cam curvature.

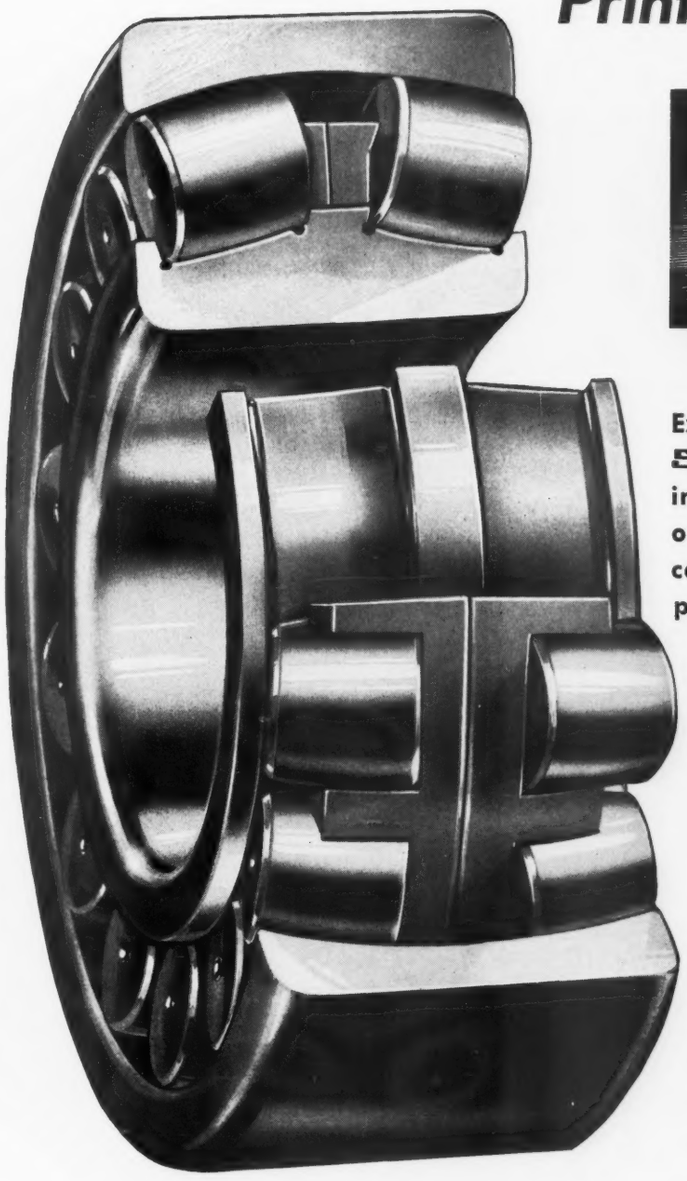
If the first elevator binds in the slide guide and leaves transfer position with a jerky motion, it will travel unevenly down to position. This is caused by mal-adjustment of the first elevator gibs or a binding condition of the slide guide which is out of position, or it may be due to sticking or lack of lubrication on the first elevator slide and gibs and the front vertical surface of the transfer bar against which the first elevator front jaw bears when in transfer position. This transmitted disturbance may cause irregular seating of the second elevator head at normal position.

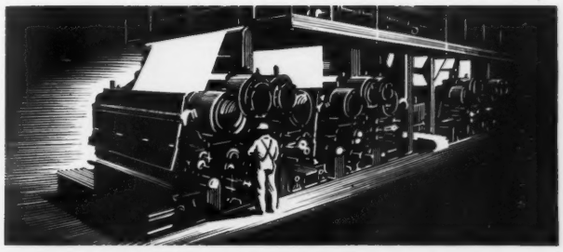
(2) Front-center part of bar strikes lower guide bracket (transfer channel bar aligning post):

When the second elevator bar plate (Linotype) after long use or because of persistent lack of lubrication, is worn where it strikes the aligning post, the second elevator bar may strike the post in such a

*Chief Composing Room Machinist, Kansas City *Star*.

The SKF Self-Aligning Printing Press Bearing





Experience and performance prove that the SKF Self-Aligning Spherical Roller Bearing is the solution to bearing problems on printing press cylinders. This bearing can be readily applied to suit individual press designs insuring these advantages:

SELF-ALIGNMENT to compensate for deflections without binding.

RIGIDITY axially and radially of cylinders to insure accurate register and impressions.

LOW FRICTION that means low starting torque and quick pick-up.

HIGH SPEEDS with high accuracy at all times.

EASY ADAPTABILITY for adjustment and preload.

REQUIRES ONLY INFREQUENT LUBRICATION.

SKF

SKF engineers familiar with printing press design are at *your* service. SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.

4379

SPHERICAL BEARINGS

way as to flatten out the rails in the front center position of the bar. The remedy is to apply a new bar plate.

(3) Left-hand end of bar rakes back or front first elevator jaw:

Too much tension on the bar link counterbalance spring causes excessive wear on the bar plate and often causes the plate to rub too hard on the aligning post. In turn, the head fails to seat properly on the transfer channel. Too much spring tension accomplishes no good purpose. It should be just tight enough to hold the bar link firmly against its stop pin with 30 ems of matrices on the bar. If but 12-em measure, for instance, only is used on the machine, the spring tension may be lightened to advantage. The rails of the second elevator bar are less likely to rub against the post and be damaged by it with the lighter spring pressure.

If the slide guide is out of true relationship with the transfer channel or *vice versa*, the left end of the bar also will be damaged.

(4) Left end of bar rubs right end of transfer bar:

Loosen first elevator slide guide transfer bar screws and move the bar to the left if the second elevator bar rubs against it when seating at transfer position. The bar pawl should be free to fall of its own weight when the second elevator is seated on the transfer channel after the pawl has been pushed up with a finger.

(5) Matrices at left end of line not fully shifted to second elevator bar:

Adjust the automatic safety pawl so that it will not clear the upper stopping lever until the elevator transfer finger has pushed the last matrix approximately 1/8 in. beyond the left-hand end of the second elevator bar.

(6) Left end of bar rubbed by elevator transfer slide finger:

The old-style elevator transfer finger may be so bent that the front upper surface rubs against the second elevator bar and wears down the 4th or 5th rail from the top. To determine how to straighten this finger, turn the machine to the point where the finger is at its extreme right stroke with the second elevator bar in transfer position.

(7) Left end of bar is damaged because of bad alignment with first elevator jaws:

The first consideration in adjusting the relationship of the first elevator jaws with the second elevator bar at transfer position is to see that the first elevator front and back jaws are spaced properly—in other words, the jaws must be maintained so far as possible in the original condition as when the machine was received from the factory. Of most common occurrence is a worn condition of the back jaw rail which supports the matrices by means of the upper back lugs. This jaw and the rail can be fitted if sprung out of position due to accidental causes. If badly worn, replace the jaw. While it is not of common occurrence, yet on the occasional machine the transfer channel plates may become sprung apart, in which case the abnormal condition should be corrected.

Now lock the spaceband transfer lever pawl and bring the machine to transfer position. Put a piece of white paper in the right-hand side of the transfer channel and a new full-combination matrix on the second elevator bar. Move the matrix to the left until it rests on the first elevator jaw rails, but the teeth of which are not out of engagement with the second elevator bar. Now hold the operator's lamp to throw light on the paper from above. The reflected light will make it easy to check alignment by sighting through the matrix combination from the left-hand side of the first elevator jaws. Adjustment up and down is made easily by raising or lowering first elevator slide screw by means of the adjusting screw at the bottom of the slide. If more light now shows between the matrix teeth and the bar rails at one side than on the other, the first elevator slide guide must be moved horizontally front or backwise until the reflected light can be seen equally all around the teeth of the matrix.

On the Intertype, the horizontal adjustment of the second elevator bar is made quite easily with an adjustable plate on the post. Loosening the center screw and turning in two lower screws moves the second elevator bar back; reversing this procedure brings it to the front. Linotypes now and have been fitted for some time with a movable plate on which the aligning post is mounted on the transfer channel. The plate may be adjusted with screws to adjust the second elevator bar back or forward. Ad adjustable post for Linotypes also may be secured through independent dealers.

(8) Bar damaged because spacebands from preceding line remain in transfer channel and have not been transferred to spaceband box from preceding matrix line:

Unfortunately, failure of spacebands transferring from the transfer channel into the spaceband box is often considered merely a source of annoyance. The operator shoves them into the spaceband box by hand without realizing that they are responsible for nearly all of the nicks to be found on the center part of the second elevator bar rails.

To correct this condition, make sure that the elevator transfer finger is square front to back and is perpendicular in relation to the transfer channel rails. A drag really is necessary to steady the spacebands and to keep them from swinging at the lower end as they are transferred to the spaceband box. Provide this drag (in case it has not been provided) by raising the channel spaceband rail so that when the spaceband sleeve lugs are resting on the transfer channel raises in a vertical position, the long or wedge part of the spaceband will be within .. in. of being fully extended. The old remedy consisted of packing a length of 1/4 in. round leather belt in the groove at either side of the rail.

The spaceband transfer lever pawl guide should be renewed to hold spacebands steady and the spring in the transfer lever pawl may need to be stretched or replaced. The elevator transfer slide finger must advance into the slot in the spaceband transfer lever pawl until the right side of finger comes within 1/8 in. of the bottom of the slot.

(9) Excessive wear at left end of bar due to spring link:

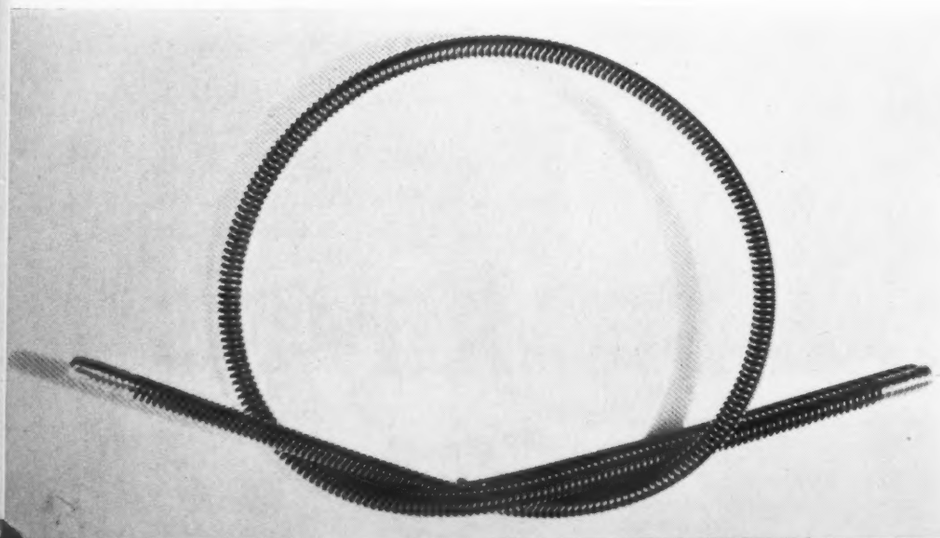
If the second elevator bar link is bent because of an accident so that the right-hand side of the bar plate does not seat properly on the transfer channel the matrices may transfer to the second elevator bar readily enough, but they wear the bar down rapidly until the bar is no longer fit for use. In this case, the cocked position of the bar is forcing the matrices to travel uphill while their normal action is horizontal. A sprung link leg will throw out the horizontal transfer adjustment. Springing a link is an unusual occurrence, but it is mentioned here because links have been sprung through careless handling of the machine.

Matrix Remover

AL KREUGER, Chief Composing Room Machinist for the Cleveland *Press* has devised a matrix remover for use in pushing out matrices which occasionally clog the distributor channel entrances on line-composing machines. Use of this particular instrument does not damage matrices which are to be pushed out of a clogged channel in the entrance nor will it damage the entrance channel itself. While being used, the flexible body of the tool readily conforms to the curvature of the channel entrance.

The matrix remover consists of a section of newspaper escalator or conveyor spring wire which is wound approximately 3/16 in. diam. The section is cut off in 17½ in. length which is the most convenient length for the purpose.

After the escalator wire has been cut to length, Mr. Kreuger inserts brass escutcheon stud in each end of the tool and fastens it securely with soft solder. The escutcheon studs have a shank approx. 5/8 in. long and a shank diameter of about 0.060 in. The round head on the stud prevents damage to matrices or channel. One of these instruments has been provided for each machine in the Cleveland *Press* composing room.

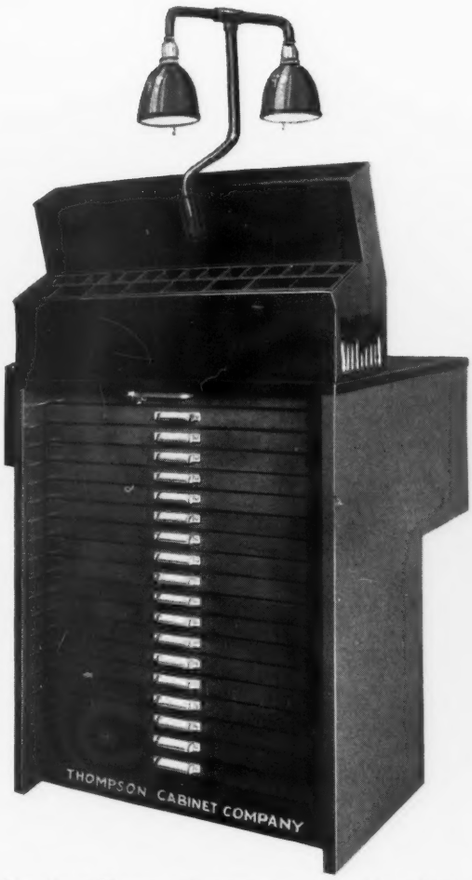


Kreuger's line-composing machine clogged channel entrance matrix remover. The photographer tied the tool in a knot to show flexibility of the tool.

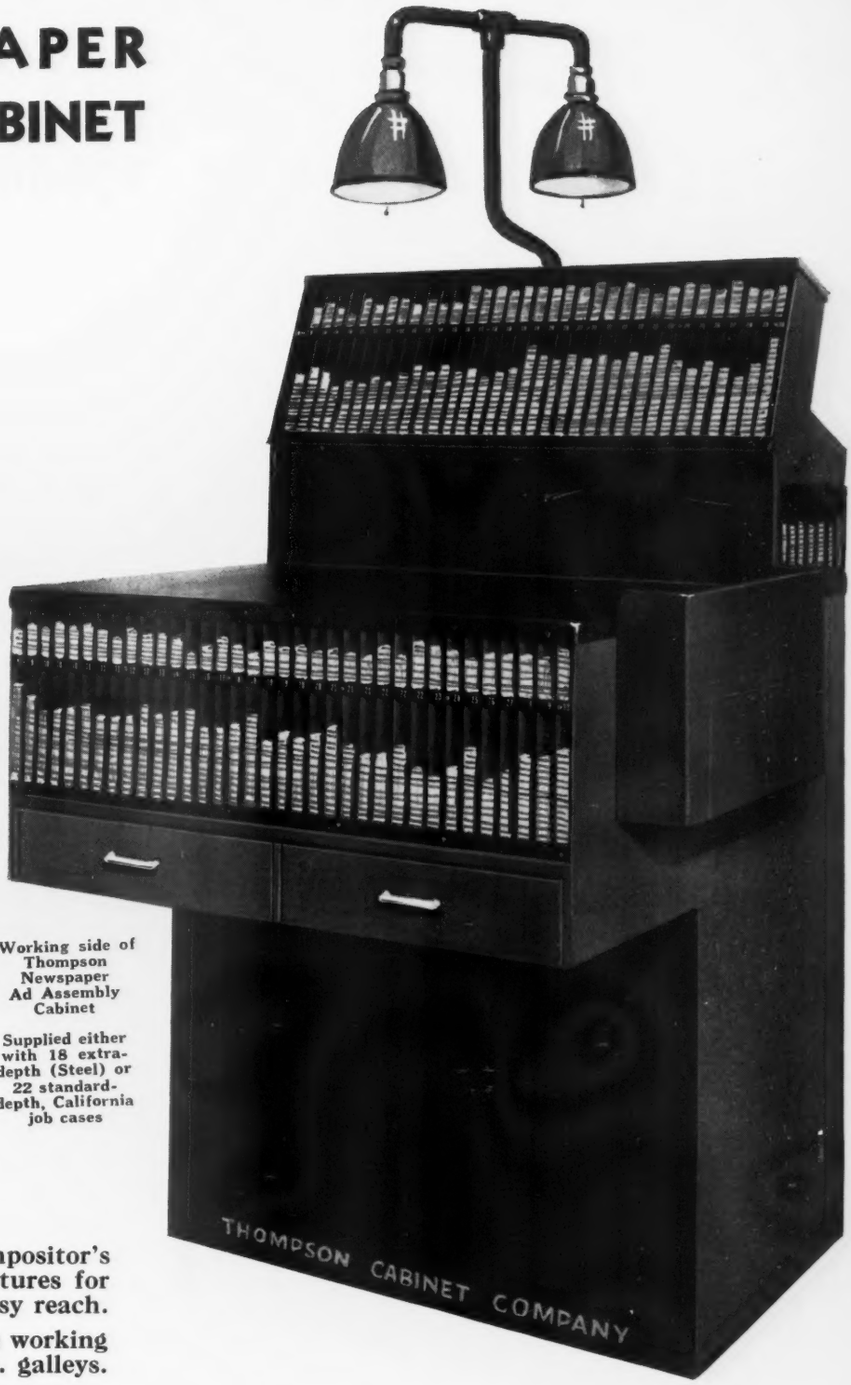
Efficiency is the KEYNOTE

with this NEWSPAPER AD ASSEMBLY CABINET

(No. 12043T)



Case side of Thompson Newspaper ad assembly cabinet



Working side of Thompson Newspaper Ad Assembly Cabinet

Supplied either with 18 extra-depth (Steel) or 22 standard-depth, California job cases

• A beautifully neat and compact ad compositor's working unit containing all necessary features for rapid ad assembly. All material within easy reach.

Enameled steel work top provides generous working space for compositor; accommodates 24 in. galleys.

Ample lead and slug storage in rack at top of cabinet from 4 to 18½ picas.

Type high material storage in compartments at sides of cabinets.

Lead and slug storage in racks in front of cabinet may be arranged to accommodate measures from 19 to 77½ picas.

Sloping back on case side of cabinet may be fitted with space and quad or rule case.

Case and overhead lighting fixtures and slug bin are optional equipment. We'll be only too glad to explain the efficiency of these modern cabinets—just ask us.

THOMPSON CABINET COMPANY

LUDINGTON, MICHIGAN

Iowa Mechanical Conference Executive Delegates to Des Moines Meeting

1—Left to right: C. H. Bleuer, Composing Room Supt., Davenport, Iowa, Democrat, *Vice President; Guy Chappell, Mechanical Supt., Iowa City,* Press-Citizen, *President; Paul F. Kamler, Clinton, Iowa,* Herald, *Secretary-Treasurer. New Officers of Iowa Newspaper Mechanical Conference.*

2—From reader's left to right: L. T. Caldwell, Cedar Rapids, Ia.; Andy Jose, Des Moines, Ia.; Leon Link, Cleveland, Ohio; L. J. Chase, St. Louis, Mo.; L. C. Doran, Chicago, Ill.

3—Reader's left to right: Ernest B. Nodland, Marshalltown, Ia.; Leo Rosenberger, Clinton, Ia.; Geo. Fouts, Council Bluffs, Ia.; Oscar E. Runquist, Clinton, Ia.; Frank (Red) Mitchell, Davenport, Ia.

4—Sioux City, Ia., delegates to the convention included (reader's left to right): Harry Eybers, A. J. Amsler, R. L. Watkins, Clark W. Olney, Paul A. Moore, Luke R. Winn, K. W. Reilly and Chas. H. Dirr.

5—C. E. (Red) Moffitt, Ft. Collins (Colo.) Express-Courier, *presented an interesting cost-finding survey he had made in his plant.*

6—Commencing at left these executives are: H. W. Lee, Ottumwa, Ia.; Paul F. Kamler, Clinton, Ia.; Ed C. Funk, former President of the organization, Waterloo, Ia.; Luke R. Winn, Sioux City, Ia., and John L. Preisman, Chicago, Ill.

Iowa Conference

Holds successful meeting in Des Moines with more than 300 representatives present.

MORE than 300 production and mechanical delegates and manufacturers' representatives registered at the annual Iowa Daily Newspaper Mechanical Conference held in Des Moines, Iowa, May 14th, 15th and 16th. Besides mechanical executive delegates from Iowa conference territory, executives were present from Dallas, Tex.; Tulsa, Okla.; St. Louis, Kansas City, Minneapolis, Minn.; Indianapolis and South Bend, Ind. Sunday, May 14th was a get-together meeting day, with golf during the afternoon and the get-acquainted gathering in the Log Cabin on the top of the Hotel Ft. Des Moines in the evening.

Monday Morning

Monday morning an address of welcome was delivered by Gardner Cowles, Jr., executive editor of the *Register and Tribune*. Mr. Cowles spoke on "The Future Life of the Newspaper." George Yates, chief photographer, *Register and Tribune*, told how many hazards the photographer encounters to get a picture and also the co-operation given photographers by mechanical departments when late photo copy comes to office.

John Collins, chief of the Engineering Dept., American Type Founders, spoke on "The Modernization of the Composing Room." A luncheon was then served to the conference by the management of the *Register and Tribune*.

Monday Afternoon

Opening the afternoon session was a talk by J. C. Dunn, General Sales Manager, Vulcan Proofing Co., Brooklyn, N. Y. on "Impression Cylinder Blankets.

The session was then broken up into groups for their annual Question Box, a feature of all Iowa conferences. The composing room delegates met under chairman C. H. Bleuer, Davenport, (Ia.), *Democrat*, where topics concerning the composing room where taken up. Each of the line-casting machine company representatives were allotted time to tell of the new features of their machines. The Mergenthaler Linotype Co., was represented by Clifford C. Holley, Chicago, Ill. Intertype Corporation, was represented by Walter Severin, Chicago, Ill. The Linograph Co., was represented by Harry Horn, Davenport, Iowa

Stereotype and Pressroom executives held their group meeting under the chairmanship of Guy Chappell, Iowa City *Press-Citizen*. Among the questions taken up was: "Cost and production records for Stereotype Departments and methods of building up cuts in newspaper offices where there is no flat shaver."

This year the Photo-engravers were added tot he conference, and this being a new

With its comprehensive research program, International Printing Ink has pioneered in the development of comic and web color inks for newspaper printing. "Keep in touch with IPI." Write Department P.E. 6, 75 Varick Street, New York City.

The comic character, "Smokey Stover," is used in this advertisement through the courtesy of the Chicago Tribune-New York News Syndicate, Inc.

department, no chairman was arranged for and no report of the meeting was given to the general meeting other than the recommendation that future conferences place them on the group with the stereotype and pressroom group as they would be more familiar with what these two departments wish of them.

Tuesday Morning

Tuesday morning session was opened by a talk by C. S. Crafts, Chief Engineer, Goss Printing Co., "Improvements made in Web Printing Presses." This address was followed by R. C. Griffoul, Wood Newspaper Machinery Corp., New York, who talked about, "Vacuum Casting Boxes."

Tuesday Afternoon

The afternoon session was taken up with election of officers and the selection of the next convention city. Guy Chappell, Iowa City *Press-Citizen*, was named president; C. H. Bleuer, Davenport, (Ia.), *Democrat*, was named vice president; Paul F. Kamler, Clinton, (Ia.), *Herald* was named secretary-treasurer.

The convention will be held in Sioux City, Iowa, on May 19, 20 and 21, 1940.

It was voted to retain the name, Iowa Daily Newspaper Mechanical Conference and to invite any paper in the states represented during the past few years to send mechanical executives upon payment of $5 annual dues. This year it was decided that the Iowa Conference remain an independent organization.

Bodoni Campanile Folder

Ludlow Typograph Company publishes a colorful folder, size 8½ in. by 12 in., showing many ways of using Bodoni Campanile, a tall and slender yet bold version of Bodoni. Examples of practical use, produced in two and three colors, range from a letter head to a store announcement. Bodoni Campanile is shown in combination with Ludlow Bodoni Bold, Bodoni Modern and Coronet Bold. On the back page is a showing of all sizes from 18 to 72 point. Copies of this folder will be sent on request to those writing to the Ludlow Typograph Company.

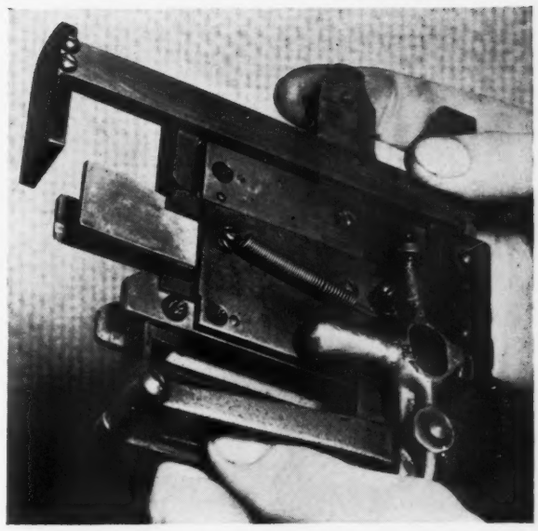
Gathering Type Metal Samples for Analysis

COMPOSING machine metal manufacturers have told us from time to time about the importance of proper metal analyses at regular intervals so the stock of metal will not be thrown out of balance and cause trouble in one form or another in the composing machines. These troubles are too well known to enumerate here. The important thing, however, is to see that the metal sample for analysis is taken regularly.

The plan adopted by Deo Padgett, Composing Room Superintendent of the Cleveland *Plain Dealer* is simplicity itself. A slug from the correction bank is dropped one each day into a tin can mounted on the distributor bracket of an Intertype machine near the dump. This duty is assigned to the dump men.

The tin can is quart size and a slot of proper dimension to admit as large as a 10 pt. slug is cut in the lid. On the can is cemented one of the forms used in the *Plain Dealer* composing room containing the numerals from No. 1 to No. 40. As a slug is dropped in the slot each day, the dump man writes the date in on one of the blank spaces to show that he has done his duty for the day.

Mr. Padgett suggests that one of the best ways to follow through with a metal sample for analysis which would be representative of the stock in use, particularly with reference to composing machine metals where the bulk of the stock is constantly flowing through the plant, is to assemble the slugs collected in the can and run them through a composing room saw. The cut should be taken through the 30 slugs so that a 4-pica center section of each slug can be sent to the metal manufacturer for analysis.



By means of this square-gauge, the machinist may know positively if distributor box rails align properly on line-casting machines.

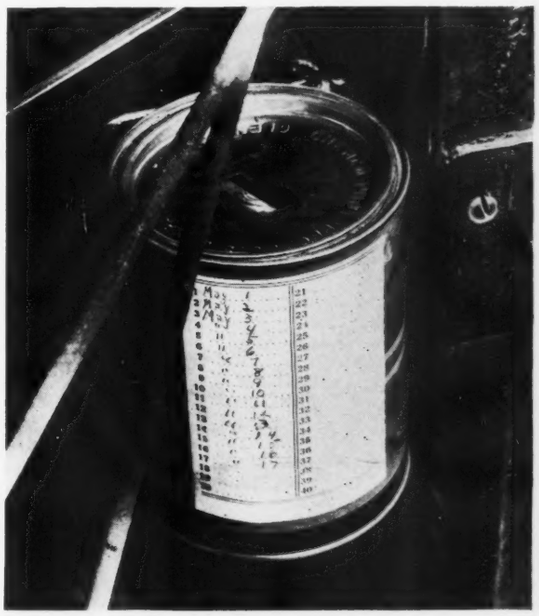
Distributor Box Rail Gauge

Application of a new set of rails to a single-distributor box sometimes results in the separating ends of the rails being out of true (out of square). One of the reasons for this condition is that the machinist is not called upon to apply rails except at infrequent intervals. In fitting the rails to the dowels sometimes unnecessary filing of the dowels or dowel holes throws the rails out of true relationship. Even where an experienced machinist applies rails, it is best for him to have some means of checking to see whether they are positioned properly with respect to their relationship one to another.

There is nothing new about the square gauge shown in the accompanying illustration, but its particular form may be new to many machinists.

The stock is made from steel, 5¼ in. long, by ½ in. wide, by ¼ in. thick. The blade itself is made from stock 1¾ in. long, ⅞ in. wide, by ⅛ in. (discarded liner will do) thick. One dowel and two screws hold stock and blade together rigidly. The stock is set in a recess for further strength. The important dimension is the distance between the underside surface of the stock and the bottom of the blade which is $^{29}/_{32}$ in. when the gauge is in position as shown in the illustration.

It is particularly important that the distributor box upper rails be square one with another. To test this condition, the square stock is laid upon the shoulder of the box casting and slid along until the blade is positioned just over the horizontal surfaces of the upper rails. When both rails are shown to be true with the square the machinist may know also that the rails will be in proper position to the distributor bar when the box is applied to the machine.



This tin can fastened to line-composing machine distributor bracket serves as a depository for collecting metal sample for analysis.

Mechanical Dept. Coordination

In which the production manager asserts mechanical departments will coordinate if given the chance to do so.

By K. L. GREGG*

WHILE discussing the Southern California Mechanical Conference with our advertising manager, I mentioned that I had been invited to talk on the subject *Co-ordination of Mechanical Departments*. I thought perhaps he would say something that would give me a lead for this talk. He did, alright, but it was somewhat different than I expected. He said, "Oh, nuts! Tell 'em to get a club and use it."

I realize he has felt like doing just that many a time, and who can blame him, when for instance, the ad alley insists on following

K. L. Gregg, Production Manager, San Diego (Calif.) Union-Tribune.

copy without a query when the copy reads "$20 suits reduced to $30." Or, when a stereotyper will say that when two plates are cast from one mat and one cast is ok, the other must be ok also. Or, when he comes in contact with a pressman like the one who is reported to have said, at an A.N.P.A. Mechanical Conference while ink coverage was up for discussion, "I can't figure ink coverage because my fountains leak."

But, how many times do the mechanical departments feel like using at least one club for each department with which we come in contact? How about the ad solicitors who go out and sell two or three half-page ads for the same position, or at least promise a far forward position, page two, three or four, and guarantee second impression for every page? Or, the fellow who carries copy around in his pocket for hours before turning it in, and who tells the advertiser that a re-cast from a cut that has already been re-cast will reproduce perfectly and that a swell reverse "sig" or "closing out forever line" can be cut from a piece of linoleum—if one has a sharp knife. Or how about an editorial room that will send down ten single and twenty double column heads when twenty singles and ten doubles were asked for. Or the head writer who insists on rewriting a banner line two or three times although it was OK in the first place, while we are rushing to get out an extra.

To top it all off, here come the sharp pencil boys in the accounting department who want to know why we didn't call for bids on a $17 repair job that probably would have cost at least $25 if we had done so. Don't we have fun! And they say we need co-ordination in the mechanical departments.

All right, let's have some cooperation. But this co-ordination and cooperation should start with the business office, the advertising department and the editorial rooms because, after all, our work cannot start until those departments have done their share. Naturally there will be more co-ordination in the mechanical departments and all through the plant if there is an efficient co-ordinator on the job. We must have team work and to get team work we must have a good coach. We may have a lot of individual stars on the team, but if each one plays for himself (and to the devil with the other fellow) very few games will be won.

I understand that at least one large newspaper in California calls a huddle of all department heads every morning to discuss the problems of the day. No doubt that is the proper system for that particular newspaper but it is not the solution for all, because of varying business and production conditions. I feel that a mechanical superintendent or production manager who is familiar with the problems of all departments and who can use some common sense is the answer to the plea for co-ordination. He has an important (and I happen to know a thankless) job but if he will keep in close contact with editorial, advertising and all other departments, as well as the mechanical departments, so that all unusual conditions that can be foreseen are planned for ahead of time, it will not be necessary for the publisher to call very many meetings of department heads.

Speaking of individual stars reminds me of conditions that prevailed for years in a plant with which I am quite familiar. The publisher was a fine man, loved and respected by all, but efficiency was lacking. For instance, a cog would slip somewhere, and a deadline be missed. The papers would be late and, of course, the subscribers would kick. The following day he would call in all the department heads, one at a time, to find out what happened. Quite naturally, each one would pass the buck, and as a rule the last one to appear on the carpet would be very much in the dog house and yet probably he was the least to blame. Consequently, a lot of valuable time would be wasted and nothing was accomplished. I say to the publisher and manager: If you do not have a mechanical superintendent or production manager, either appoint or employ one, but be sure to give him some cooperation. Don't just give him the title and then tie his hands. Help him to make the other department heads realize that he is there to help them with their problems—not just to be a Simon Legree.

When I find one department "cussing" another department I also find, as a rule, that the department doing the cussing is probably just as much, or more, at fault than the one being cussed and that usually by pointing out some of the troubles the other fellow experiences the cusser soon realizes that the other fellow is a human being too. The more familiar we become with the other fellow's problems, the more tolerant we become and the more possible it is for team work and co-ordination to follow.

To sum it up: I say if the publishers really want co-ordination in the mechanical departments let them pay attention to the trials and tribulations of those departments. If the press needs new blankets, or rubber rollers should be purchased or reground, don't let the purchasing department tell the pressman he is only trying to waste the boss's money. It is probably the other way around and he is trying to save money or at least trying to print a better-looking paper. Or, if the stereotyper wants to restore balance to the metal, don't say "It was OK a year ago, why isn't it OK now?"

When the composing room complains about too many jig saw puzzle ads and too many revises or lack of cooperation from the editorial room, don't just pass it off with a shrug of the shoulder, remember that those boys are trying to hold down your page and production costs, why not do something about it, or better yet, give your superintendent an opportunity to do something?

The newspaper mechanical departments now have their correspondence courses for apprentices, their trade schools and their conventions and mechanical conferences. I have noticed that the men who take an interest in such activities are becoming more and more progressive and better fitted to help the newspapers climb out of the rut that they fell into along with the railroads. Just give us a chance and we will prove it. We will be glad to do the digging if we are furnished the proper tools.

Let us all help to keep up the good work.

Production Manager, San Diego (Calif.) Union-Tribune Publishing Company. Abstract of address given before Southern California Mechanical Conference, Pasadena, Calif., May 7, 1939.

Newspapers Install Elrod Equipment

Elrod lead, slug, rule and base casters have been installed recently by the Winnipeg (Can.) *Tribune;* Chicago *Polish Daily Zgoda;* Leavenworth (Kan.) *Times;* Sacramento (Calif.) *Union;* Attleboro (Mass.) *Sun,* and by the Bismarck (N. D.) *Tribune.*

Automatic Spaceband Wiper

Folder illustrates and describes automatic wiper for applying demetalizing chemical to casting point of spaceband sleeves and for lubricating with graphite the edge of long wedges on Linotypes only. *P-Double-E File No. 1G9.*

Packing Felts and Cork Molders

Illustrated folder published by American Publishers Supply describes packing felts, cork molders and other molding supplies for the stereotyper. *P-Double-E File No. 2G.*

SPEAKING OF SAFETY

To the Pressroom

G-E Drive and Control Systems Add Safety Features

EFFECTIVE safety campaigns are being conducted in factories, on railways, in schools, along city traffic lanes and elsewhere. Modern newspaper pressrooms, too, have made effective moves toward greater safety. In this progress they have been aided by the development of safety devices for press machinery—such as General Electric patented safety time-interval starting equipment, paper-break detectors, web-breakers, and press-cylinder brakes.

TIME-INTERVAL STARTING

One publisher has written us that only a short time after the installation of the G-E safety time-interval starting system it saved a pressman's life. With this system, the press *cannot* be started, even though all RUN buttons are set, until a warning interval of several seconds elapses. During the interval, horn, bell, or light signals indicate that the press is to be cleared.

PAPER-BREAK DETECTORS

These devices instantly detect a web break, and, in the same split second, transmit an impulse to set electric press cylinder brakes as well as the main-drive brakes. These brakes bring the presses to a halt quickly but without jarring. Because of this safeguard, there is far less danger that wraps may spoil blankets or plates. To the press crew this means that less time is required for re-threading. Less time at these nuisance duties means less risk of injury and more time available for productive service.

ASK FOR DETAILED INFORMATION

For a complete discussion of these or other General Electric provisions for smooth, flexible press performance, ask the nearest G-E office, or write to our general office, General Electric, Schenectady, New York.

For Smooth, Reliable, Flexible Newspaper Drive, It Will Pay You to Buy General Electric

NEW YORK WORLD'S FAIR—VISIT THE G-E "HOUSE OF MAGIC"—SAN FRANCISCO EXPOSITION

GENERAL ELECTRIC

011-523

Equipment

(*Continued from Page 39*)

Plate Making Camera Lamp

The General Electric Company has developed a new 1500 w. Mazda copyboard lamp for use in connection with photo-engravers' cameras. The lamp is 1500 w., is known as T-24 inside-frosted bulb, base-up burning. The lamp is available in 110, 115, or 120 v. It is fitted with a medium-bipost base, which consists of two projecting metal posts or pegs extending from and welded to the glass bulb.

Relative size of new GE photo-engravers' camera copyboard lamp as compared to pair of hands.

A special socket is required for the lamp. After inserting the pegs in the socket the lamp is locked in position by a quarter-turn of the bulb. This, too, is a recent G.E. development. A wire screen is fitted inside of the bulb above the filament in such a way as to absorb the blackening which would ordinarily coat the inside surface of the glass bulb and consequently reduce the effective light output of the lamp. The design life of the lamp is 50 hours. The maximum diameter of the bulb is 3 in. Its length is 9⅛ in.

In use before the camera copyboard, six lamps are mounted three on either side of the board, one above the other, in special fixtures. A parabolic trough reflector directs the light uniformly across the copyboard.

P-Double-E File No. 2E8.

Hydraulic Paper Roll Lowerer

The Hydraulic Paper Roll Lowerer has been designed as a means of lowering newsprint rolls from the truck tail to the ground. In operation, the Roll Lowerer is placed in a position at the tail gate of the motor truck and the Lowerer platform is raised to truck bed level. The paper roll is pushed from the truck bed onto the lowering platform. The operator then steps on the "down" pedal and the platform automatically lowers the roll under hydraulic control to street level. At this time the Lowerer platform is automatically latched. The Paper roll is then removed. Platform locking latch is released when the operator steps on the "up" pedal to permit heavy springs to pull the empty platform to elevated position for reception of another paper roll. An adjustable foot at each of the four corners anchors machine to the ground.

Capacity of the Roll Lowerer is 1800 lbs. Platform is 48 in. long by 32 in. wide. Will handle rolls 36 in. diam. by 72 in. long. In lowered position, platform is 12 in. from floor. Raised height is 42 in. Length of machine overall, 7 ft. Running gear consists of four unbreakable forge-weld swivel casters.

P-Double-E File No. 4D2.

Hydraulic Paper Roll Lowerer announced by American Publishers Supply. "Down" and "Up" foot-pedals control platform.

Signal Ink Changes Color

A new signal ink which will change color upon being subjected to steam has just been developed by the E J. Kelly Company. The ink is designed for printing on the flaps of envelopes and changes color when an attempt has been made to steam open the envelope. The ink is obtainable in any shade with nearly any color change.

Futura Combinations

In addition to the five weights of Futura announced by Intertype, each of which is duplexed with oblique, a series of the medium weight is duplexed with demibold as shown in the exhibits. Additional sizes of Rex and Cairo Italic with Cairo Bold Italic are also shown.

THIS Paragraph set in the 12 point size of Intertype Futura Medium **with Demibold** 2345

12 Point Futura Medium with Demibold

THIS Paragraph set in the 10 point size of Intertype's Futura Medium duplexed **with Demibold** 1234567

10 Point Futura Medium with Demibold

THIS PARAGRAPH set in the 8 point size of Intertype Futura Medium with Demibold 12

8 Point Futura Medium with Demibold

THIS PARAGRAPH is set in 7½ point size of Intertype Rex **with Bold** 12345

7½ Point Rex with Bold

ABC abcdefghijklmno 123

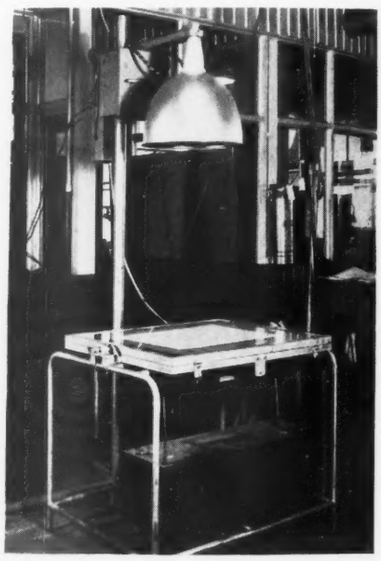
ABC abcdefghijklmno 123

12 Point Cairo Italic with Cairo Bold Italic

Intensol Printing Lamp Unit

The Intensol Photo-engraver's Printing Lamp Unit is a printing lamp with constant intensity which makes accurate timing possible, states Electro-Hydraulic Machinery Company. The lamp itself consists of a water-cooled bulb filled with mercury and argon gas producing a light very close to daylight quality. Light intensity is as high as 65,000 lumens, which corresponds to approximately 35,000 candle power on the copying surface.

The lamp shown in the picture is for use with a horizontal printing frame. Exposure time is 2 minutes. The bulb burns on an 840 v., a.c. circuit which is stepped up through a built-in transformer. The wires carrying the voltage are completely enclosed, eliminating any danger of coming in contact with the circuit. Devices incorporated in the unit operate automatically so that the lamp cannot light before the water runs through the water jacket surrounding the bulb. In case of an interruption in the circuit, or in the water supply, the current will be shut off automatically. Also, if the bulb should break, the water supply is shut off automatically.



The printing frame is 30 in. by 40 in. Adjustment is provided to facilitate raising or lowering the lamp for height, and the lamp may be swung from its normal position over the printing frame. The lamp may be hooked on a regular arc lamp circuit.

Further particulars may be obtained from Electro-Hydraulic Equipment Co. direct, or in care of *Printing* EQUIPMENT *Engineer.*

EVERY STEP...

IN THE PRODUCTION OF HUBER NEWS, COMIC AND GRAVURE INKS IS UNDER HUBER CONTROL

EVEN CARBON BLACK and dry colors, basic raw materials all-important to the quality and uniformity of publication inks, are produced by Huber in its own plants, to its own precise specifications.

Huber, alone, among ink manufacturers exercises such control over the production of basic elements, and over every other step in the manufacture of its inks—*which have been used by 7 of the 9 winners of the Ayer Award.*

The 1939 winner of the Ayer Award, the *New York Herald Tribune,* uses *Hubertone,* latest development of the Huber news ink laboratories. *Hubertone* is also used by the *New York Times,* the *Hartford (Conn.) Courant,* and the *Meadville (Pa.) Tribune-Republican,* all Honorable Mention winners.

J. M. Huber, Inc., New York, Chicago, St. Louis, Boston.

HUBER PRODUCTS IN USE SINCE 1780

HUBER INKS

automatic typesetting device didn't burst upon him one morning in full bloom.

"It was some 15 years ago while I was operating a machine," he said, "I thought about it a great deal, then, and while I was a machinist. I first had an idea of using a tape. We abandoned that in favor of the photo-electric cell."

With two sentences he dismisses the hard years when the idea was taking form in his mind, the years you have to fill in piece-meal because Buford Green doesn't talk much.

Beyond saying, "We all worked on it together," he tries to dismiss the whole subject of the Semagraph, his part and that of the others who worked along with him, from the first crude all-electric model built in 1926, through the subsequent and more perfect models, has been added the Semagraph transmitter which was demonstrated in New York on June 8, 1938.

Only the earliest years of Green's life were spent away from The Charlotte *Observer*. He was carrying papers back as far as 1907 and even then was hanging around the composing room of the newspaper. He always had shown an aptitude for building things. When he was a child he whittled out his own toys. When he came into the composing room of the newspaper he would hang around the machinist after he had finished his apprentice boy's work, for it was as an apprentice boy, that he began to learn his trade.

In preparing copy for the setter unit on the typewriter, a measuring device indicates the exact length of line as it is typed. If one or more characters are deleted (blotted out) the indicator moves backward automatically the exact amount as expressed in units. When the blotted-out characters are moved into position under the electric bulb on the setter unit, the matrix escapement mechanism is not actuated and the setter unit merely "idles" until a character which is to be reproduced is presented to the photo-electric cell.

When he got his union card after finishing his apprenticeship he began "working on a machine," as those who work in composing rooms of newspapers call the Linotype machines. It was during this interim of 15 years that the possibility of automatic typesetting began to take form. Just when he doesn't remember, for as he says now, "I didn't think of it all at once." With no particular technical education to help him solve the engineering problems which are a part of mechanical inventions, perfection of such a device as the Semagraph must have been little more than a dream to Green during the 15 years that his fingers moved over the keyboard of a Linotype machine.

But he was interested in mechanics. Now he admits that he read just about everything he could get his hands on that had to deal with science and invention.

He had become an operator at 19, which is not unusual in the printing trade. He stayed on a machine until he was 34—15 years of service. Then he became The Observer's machinist.

He had some previous experience in keeping the big machines running, for he had done a stunt as an assistant machinist for a few months before he became an operator. But loose from the machine, in direct charge of keeping them running, he began to work on his theory of automatic typesetting in earnest. He saw a magazine article on the possibilities of the photo-electric cell. Green, (who had become "Johnny" Green to composing room intimates as a galley boy, because a tramp printer had said, "You say his name is Buford? He's too little to be

BALANCED BUDGET, IS NOW THE DOMI-
NANT ISSUE OF BOTH PARTIES. IN BOTH
BRANCHES OF CONGRESS, ESPECIALLY THE
HOUSE, WITH THIS FOUNDATION ASSURED
THE PREVAILING DISPOSITION OF CON-
GRESS IS TO LET RECOVERY COME IN THE
NORMAL WAY THROUGH BUSINESS CHAN-
NELS RATHER THAN THROUGH STIMULATION
BY A GREAT GOVERNMENT BOND ISSUE.
DECIDEDLY NOT ALL THE ADVOCATES OF
A BOND ISSUE BELONG TO THE SO-CALLED
PROGRESSIVE GROUP OF THOUGHT. SOME
COMPLETELY ORTHODOX AND CONSERVA-
TIVE BUSINESS LEADERS LOOK WITH TOL-
ERANCE ON THE IDEA OF THROWING ANY-

Miniature reproduction of copy used in operating the Semagraph Setter Unit on line-casting machines. By means of a six-place dot code printed in the form of dots on the paper by means of a power-driven typewriter, a photo-electric cell in the setter mechanism is actuated. Above each letter symbol is printed the corresponding letter so the copy can be read and edited in advance of composition. The copy paper is progressively and automatically moved to expose each letter symbol (in dot code) underneath a small electric light bulb which throws a tiny ray of light through a pin-point aperture upon the coded copy. The light rays from the lamp shine through the translucent paper into the photo-electric cell which in turn actuates the matrix-releasing mechanism of the line-composing machine. Each line in the copy represents a complete and full line of slug composition.

called Buford. I'm going to call him Johnny") was intrigued. He wrote the magazine for a list of manufacturers of the device that turned light into mechanical energy. He found one manufacturer, who could produce only a laboratory cell. The price was $35. Green bought it.

From then on his mind was attuned only to the Semagraph. It wasn't called a Semagraph then, that came later. It was just an automatic typesetter that was taking form in his garage. The name of the device wasn't worrying Johnny Green a whit as he wound coils and machined steel for the first typesetter. But finally working on the principle of a photo-electric cell, Green completed his first electric model, with a magnet operating each key on the Linotype keyboard. One day the typesetter was completed. It worked. But the inventor found that an all-electric device not only was complicated but also that electric currents had a habit of shorting out. He turned to developing a more mechanical device which would operate with fewer wires.

By 1932 the more perfect machine and a typewriter which prepares the copy for scanning by the electric eye, were ready for demonstration.

Looking back over the last 15 years, Green finds that dates run into each other. That sometimes he was building a typewriter and at others was working on the typesetting device. He spent nine months working

PRODUCT OF
HELI-O-LITE
MODEL
35
THE C. F. PEASE COMPANY, CHICAGO

PEASE HELI-O-LITE "35"

● REQUIRES 45% LESS SPACE

The Pease Heli-O-Lite "35" is close-coupled.* The distance between the front and rear extremities is 45% less than in ordinary lamps. In darkroom camera work where quarters are cramped . . . and every square inch of space is important . . . the "35" is ideal. It may be mounted on the copy board or used on its own compact base. It can be swung 180°.

● LONG-BURNING ARC

Made possible by a patented electric circuit. This achievement of the Pease Engineering department permits a maximum percentage of the current to go directly to the arc; only a small portion goes through the shunt-wound solenoid. The patented circuit plus the balanced, trouble-free mechanism insures, first, a high intensity of illumination, second, ability to burn for prolonged periods . . . frequently 45 minutes . . . without breaking the arc.

● "BITES DEEP"

The "35" "Bites deep" . . . and "digs in" . . . on all types and styles of photo-copying jobs. It gives a distinct lift to the quality of negatives and prints. It produces better exposures, cleaner separations, sharper and more contrasty reproductions.

*The same balanced trouble-free mechanism in 45% less space.

● DELIVERS POWERFUL LIGHT

The efficiency of the "35" parabola-curved reflector is increased 20% or more by the finishing coat of baked-on, heat-resisting aluminum paint, which is glass-hard, permanent and easily cleaned. The reflector is one-piece cast aluminum, scientifically designed after careful research by Pease engineers. It was designed to deliver light of the maximum intensity and uniformity.

● FIRST TO BE STREAMLINED

The new Pease Close-Coupled Heli-O-Lite "35" White Flame Arc Lamp presents a pleasing, modern, streamlined appearance. Light weight and compact, it is an object of beauty . . . as modern as tomorrow. Yet it offers the lamp user savings, profits, and high quality negatives and prints.

● INCREASES THE PROFIT

. . . of photo engravers, photo lithographers and many others requiring lamps for photographic camera purposes. The Pease Planning Group designed the new "35" Heli-O-Lite to fulfil a variety of needs . . . to harmonize with the most modern of environment . . . to perform with time-tested brilliance in cramped quarters . . . save time . . . lower costs . . . and ***increase profits.***

ENGINEERING SPECIFICATIONS

LAMP AND REFLECTOR—Swings in 180° arc. Locks with convenient hand set screw. Welded sheet steel removable cover. One-piece cast aluminum reflector 13″ square at outer edge. Scientifically modified parabola gives uniform light distribution without shadows. Ash trough at front edge and platform base catch hot ashes and reduce fire hazard. Mechanism completely insulated at electrical connections.

ILLUMINATION—Baked-on, heat-resisting aluminum paint increases illumination 20%.

AUTOMATIC CARBON FEED—On a 12″ carbon trim carbons will burn to 3″ lengths with but one retrim. Special clamps and knurled locking nuts hold carbons securely. ***Only white flame carbons can be used.*** On D.C., Upper Negative Plain 5/8″ x 12″. Copper-coated Lower Positive 3/8″ x 12″. On A.C., Upper Negative Plain 5/8″ x 12″. Plain Lower Positive 3/8″ x 12″.

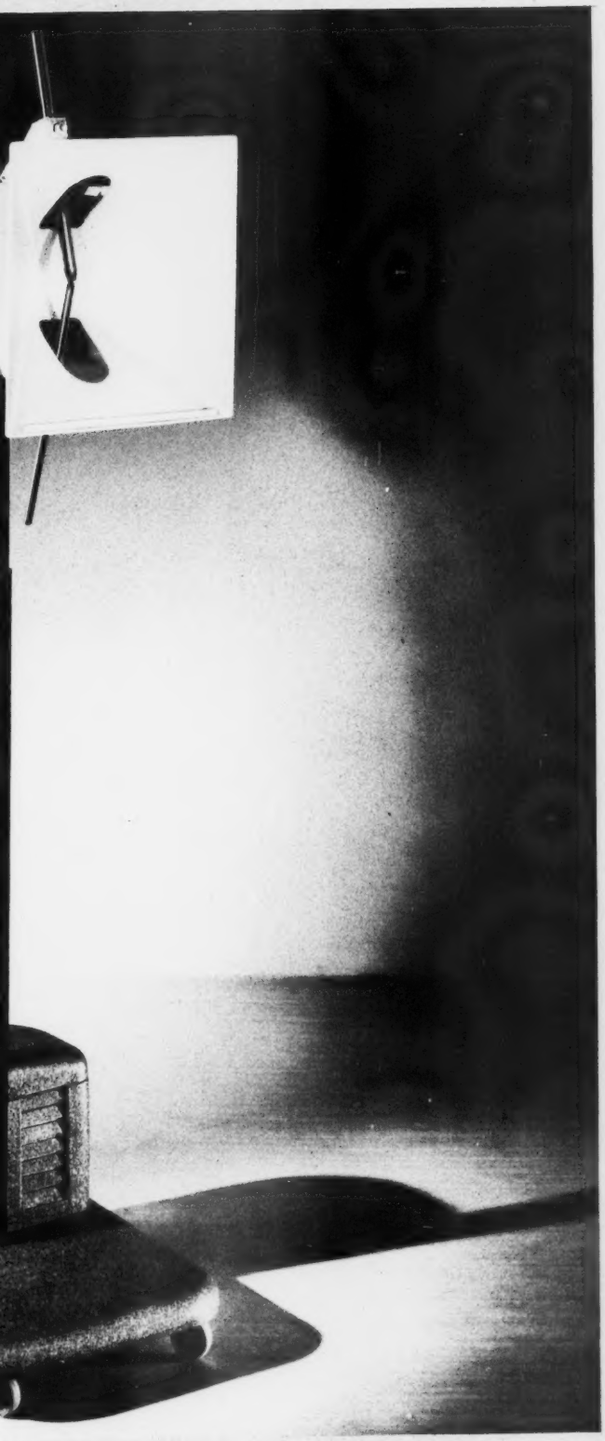
PATENTED ELECTRICAL CIRCUIT—Permits only a small portion of the current to flow through solenoid coil which actuates lamp mechanism. Assures unsurpassed arc stability.

RESISTANCE COILS AND WIRING—Heavy, non-corrosive Advance resistance wire wound around strong, porcelain cores in ventilated base. All main leads welded. Asbestos insulated motion picture cables in asbestos fibre conduit.

TELESCOPING STANDARD AND BASE—Perfectly balanced. Easily raised and lowered vertically. Strong hand screw with streamlined handle provided for locking at any height. Ball bearing casters having 2″ solid rubber rollers.

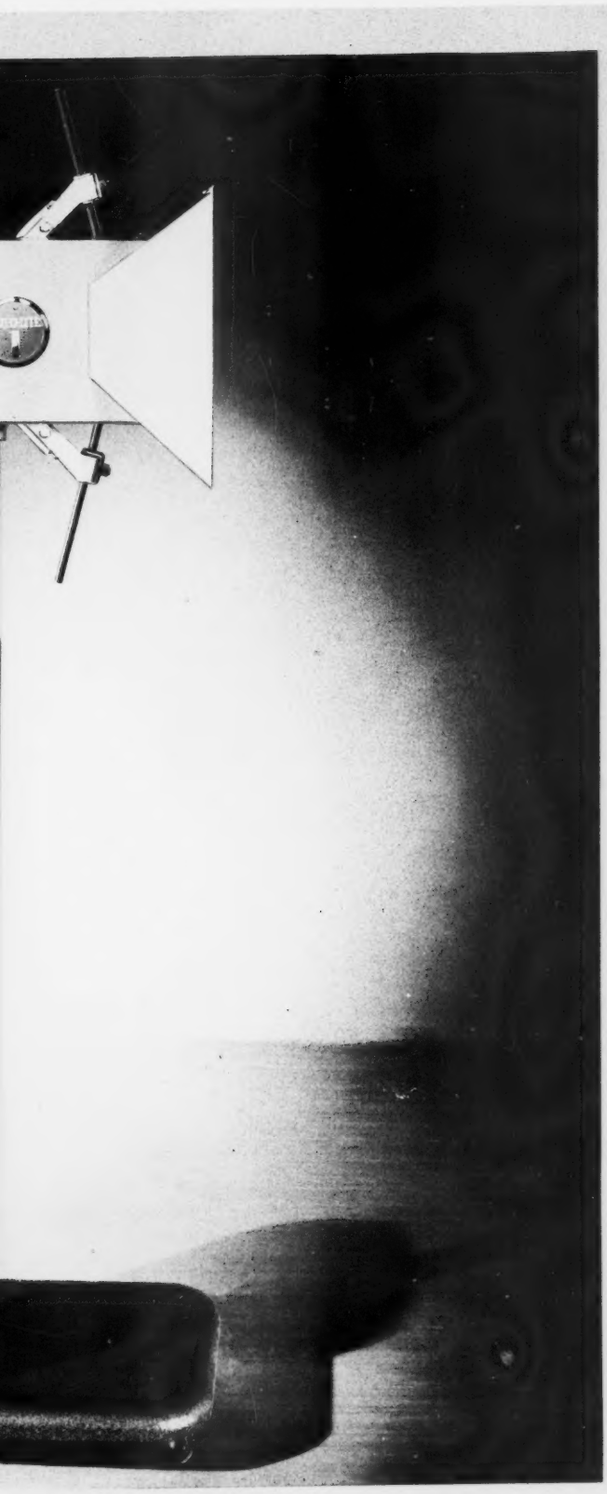
DIMENSIONS—Center of arc at highest, 66″—lowest, 41″. Floor space including lamp overhang, 15 1/8″ x 20 3/4″. Net weight, 65 lbs.

Pease Close-Coupled 35 Ampe

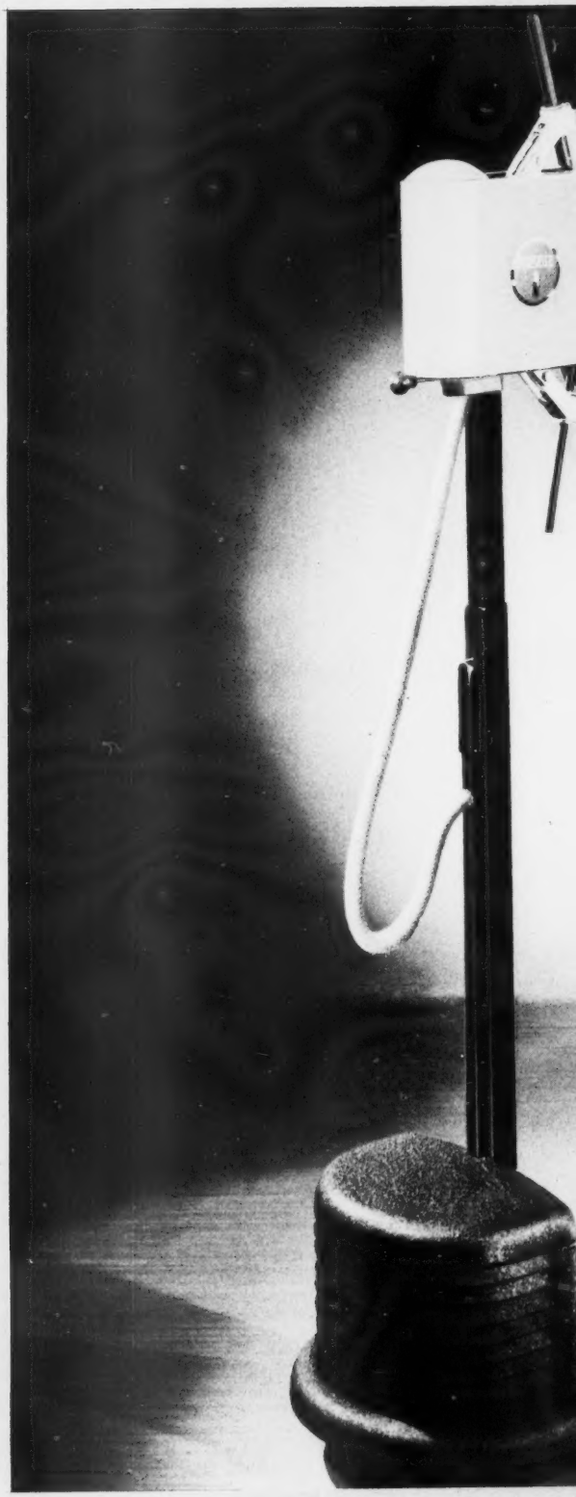


Ampere Heli-O-Lite Front View

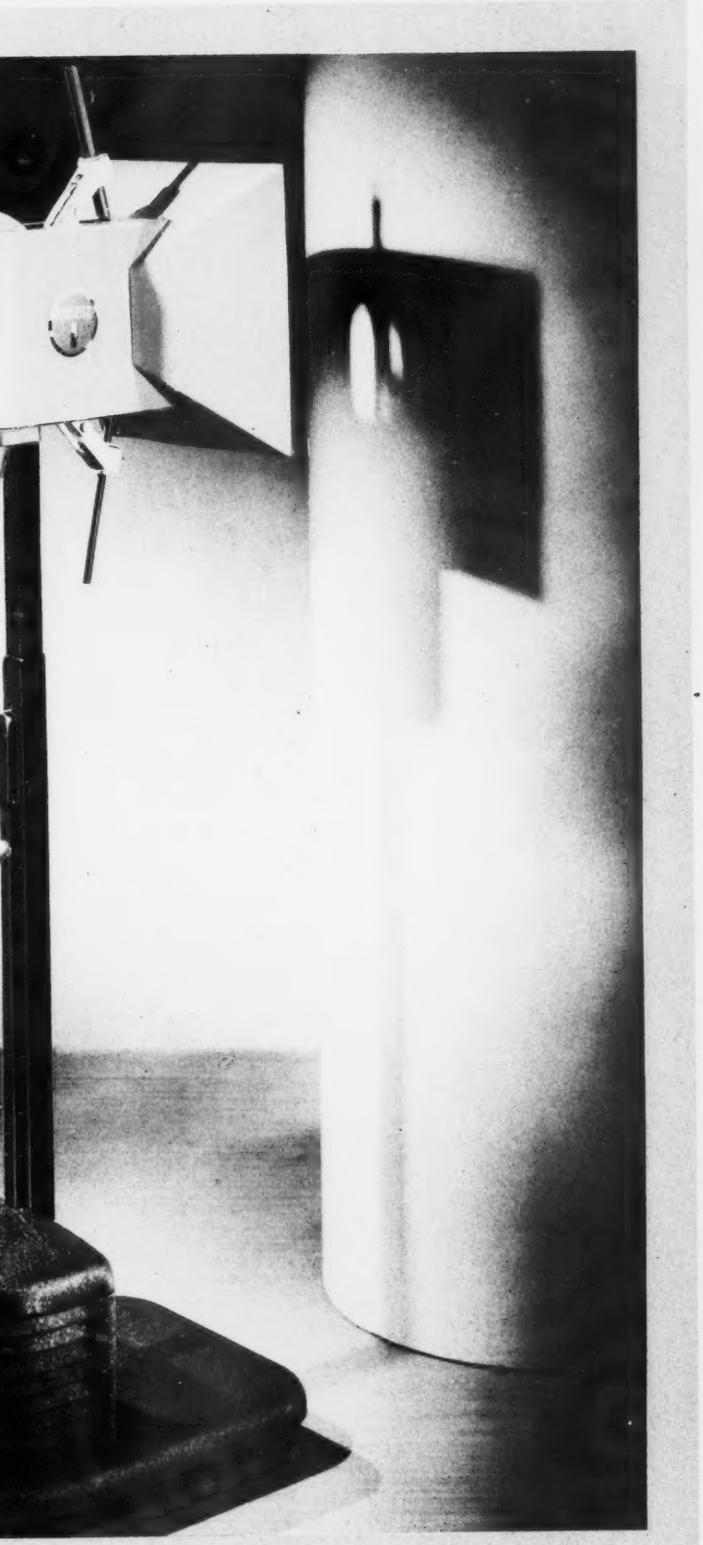
Pease Close-Coupled 35 Ampe



Ampere Heli-O-Lite Side View



Pease Close-Coupled 35 Amp



5 Ampere Heli-O-Lite Rear View

Technical Information and Literature

FOR PRODUCTION AND MECHANICAL EXECUTIVES ONLY

PRESSROOM

1 ROLLERS — "The Philadelphia Evening Public Ledger's 48 press units are equipped with Niles and Nelson's Goodrich Rollers." Information.

2 OFFSET PRESS—"Harris Offset Presses are built by and for Offset Draftsmen." Full details.

3 PAPER—"Whatever the nature of your next printing job, make it stand out with the quality of Champion Paper, the foundation of good printing."

4 MIEHLE Printing Press Co. will send informative details on how you can capitalize on their advertising campaign.

5 PRESS BLANKETS—Tingue, Brown & Co. will send you details on Felt, Cushion Cork, Tingucork and Foundation blankets. For gauges, see page 17.

6 DETAILS on composition, rubber or vulcanized oil rollers will be forwarded to you by Sam'l Bingham's Son Mfg. Co.

7 INKS—"Morrill inks cover fully, leave no blurred or ragged edges even at highest press speeds. Let the Morrill man serve you."

8 PRESS—"Remember to see your ATF salesman and ask him to show you the latest 17 by 22 press sheet." Specifications of the ATF 17 by 22 Kelly are on pages 44 and 45.

9 BEARINGS—"SKF bearings enable presses to run at high speeds with low operating costs—assure accurate register—give cleaner reproduction."

10 ROLLERS—"Dayco Rollers embody superior inking qualities—are durable—have the right consistency and affinity to properly distribute ink." Ask for further details.

11 PRESS—Photograph of the 32 page Duplex Unitubular Press, which is to be installed at Madras, India, is on page 18.

12 ROLLER FINISHING EQUIPMENT—"Cut costs in your pressroom. Refinish your own Rollers." Booklet tells how.

13 INKS—"Every step in the production of Huber news, comic and gravure inks is under Huber control. Learn more about Hubertone."

14 ROLLERS—"Investigate Wild & Stevens, Inc., for your roller needs."

15 PRESS PACKING—New England Newspaper Supply Co. "offer a variety of fine blankets which can be used in combinations which best suit your needs."

16 AUTOPASTER—Let the Wood Newspaper Machinery Corp. send you free circular on their product. Circle the number on the coupon and mail.

17 INFORMATION on Rapid Mercury Rollers. "Unfailing reliability . . . day in and day out."

18 SAMPLES—Riegel Paper Corp. will send you samples of their ready cut and scored treated jute topsheets. State size and press.

19 VULCAN Rollers "are permanently uniform in diameter . . . remarkably soft and easy to set . . . unaffected by heat, cold or humidity." Write for literature.

20 PRESS — "The mechanical man recognizes many features in Hoe presses which promote operating efficiency and safety." Coupon brings data.

21 DRIVES—REELS—TENSIONS —Alternating current press drives with full automatic control are furnished for all sizes of newspaper, magazine and rotogravure presses by Cline.

22 PRESS—List of six recent Goss orders can be found on page 8. "Check up on the mechanical, economical and safety features of Goss presses."

23 ROLLERS—"Competent Ideal representatives are available to make a thorough survey of the requirements of your plant without obligation."

24 INK—Howard Flint Ink Co. will send color chart of Arrowhead black and colors. Fill out the coupon.

25 ROLLER BEARINGS—"Timken Bearings assure freedom from friction and wear; hold cylinders in correct and constant alignment; provide full protection against all loads."

26 MAIL THE COUPON for information and details about Godfrey Rollers.

27 PRESS BLANKETS—Goodyear announces "an important new contribution to better high-speed printing—a balanced three-piece semi-hard packing." Information will be sent.

28 BALL-BEARING ROLLER CORES—Manufactured by the William C. Hart Co. "Can make tremendous saving for you."

29 INKS—"Zephyr Blacks, by Sinclair and Valentine, are indispensable on rush jobs . . . cost no more."

30 CONTROLS—General Electric will send you informative details on press drives and controls.

COMPOSING ROOM

31 DETAILS—on "efficient lino- DETAILS—on "efficient Lino- on page 85.

32 CUT CEMENT—"Booth's Zink Cut Cement is fast and economical. Quicker setting time brings 30% faster cut mounting."

33 MATRIX CONTRAST SERVICE —"makes lines of Linotype and Intertype matrices readable at a glance. Saves time, eye-fatigue, reduces errors."

34 COMPLETE DETAILS on the Monotype System of composition and non-distribution will be gladly forwarded to you. Use the coupon at the bottom of the page.

35 SAW-TRIMMER—"C&G Saw-Trimmers have long life with minimum upkeep." This is evidenced by the few C&G Saws on the resale market, says Milwaukee Saw-Trimmer Corp. Circular will be mailed to you.

36 "EFFICIENCY is the keynote with the Thompson Newspaper ad assembly Cabinet." Descriptive photographs on page 61. Further information will be sent.

37 SUPPLIES—Gummed Packing Felt, Cut Mounting Tape, Streamline Feeder and other Eastern Newspaper Supply products are described in the latest catalog. Coupon brings it.

38 MOTORS—"The Cushman Offset Motor is a favorite in hundreds of newspaper composing rooms." Details.

39 TYPESETTING MACHINE—"Linograph 50 handles standard matrices—accommodates broad range of type."

40 MAGAZINES—For Linotype machines—Mold disks rebuilt. Mail the coupon for new catalog.

41 NEW Page Size Monomelt Plane-O-Plate. Full data will be sent.

42 ROUTER BITS—"Onsrud Bits are made by a company specializing in the manufacture of Router bits." Catalog.

43 SAW—"Model D Mohr Saw helps you meet deadlines and reduces composing room expense."

44 COMPLETE information on the New Economy Model Rouse Vertical Meterer will be sent to you.

45 SLIP-OFF INGOT—Information on a new "Double-Ear slip-off ingot." Circle this number on the coupon.

STEREOTYPE DEPT.

46 MAT CLEANING SERVICE—"Let Klean-O-Mat reduce your costs." List of new users on page 19. Full information and comparative cost analysis on request.

47 DRY MATS—"Wood Dry Mats are made by men who know the problems of stereotypers."

48 NEW MAT FORMER AND CURVED ROUTER—Sta-Hi Corp. "Will send complete data on these two new and improved machines."

49 MOLDING BLANKETS—Coyne and Paddock offer information on their product.

50 DRY MATS—"Stereo Superintendents stick to Certifieds as a basic necessity in meeting schedules."

51 DETAILS will be mailed on "Franklin Clean Print Molding Blankets," a product of Russell Products Co.

52 TRY the Lake Erie Direct mat while you are visiting the Conference. . . . "fast, instant pressure control, eliminates stretch, saves type."

53 DRY MATS—Attending the Convention? Take your stereotype problems to the Burgess suite at the Benjamin Franklin Hotel, or use the coupon to have a representative call on you.

MISCELLANEOUS

54 METAL QUALITY CONTROL—The Imperial Plus Plan "will insure the quality of your metal." One of the branch offices will be glad to consider your metal problems.

55 PRIZE winning poster in contest conducted by National Graphic Arts Expositions, is shown on page 51.

56 ZINC—"Edes' customers expect and get unvarying uniformity in every shipment, regardless of the demand."

57 TRUCKS—Elwell-Parker says, "Let us prove that your paper handling costs can be reduced sharply—permanently."

58 CAMERA LAMP—Pease Heli-O-Lite "is close coupled, compact . . . requires 45% less space." Pease will send specifications.

59 CATALOG containing over three hundred items of interest to newspaper mechanical executives will be sent by American Publishers Supply.

60 REMANUFACTURED Newspaper Equipment. The M. L. Abrams Co. will send you interesting data.

61 ZINC—Backoted sheets are metallic coated to resist engraving acids . . will help you meet modern engraving standards."

62 ECONOMIZE—Find out about Challenge lever paper cutters, ink distributors, proof presses and high speed quoins.

63 LUBRICATION—"Machines equipped with Bijur Automatic Lubrication waste no time."

64 MOTORS—"Kimble Electric manufactures motors for all types of printing machinery."

This coupon must be filled out completely in order to secure the literature or information you request. Circle only those bulletins you particularly want. This service is *only* for production and mechanical executives.

For Production and Mechanical Executives Only.

PRINTING EQUIPMENT ENGINEER **June**

Without obligation please have the manufacturers send me literature or information circled below. (These numbers correspond to numbers on descriptive paragraphs).

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 49 49 50 51 52 53 54 55 56 57 58 59 60
61 62 63 64

PRINT YOUR NAME AND ADDRESS

NAME.....TITLE.....DEPT.....

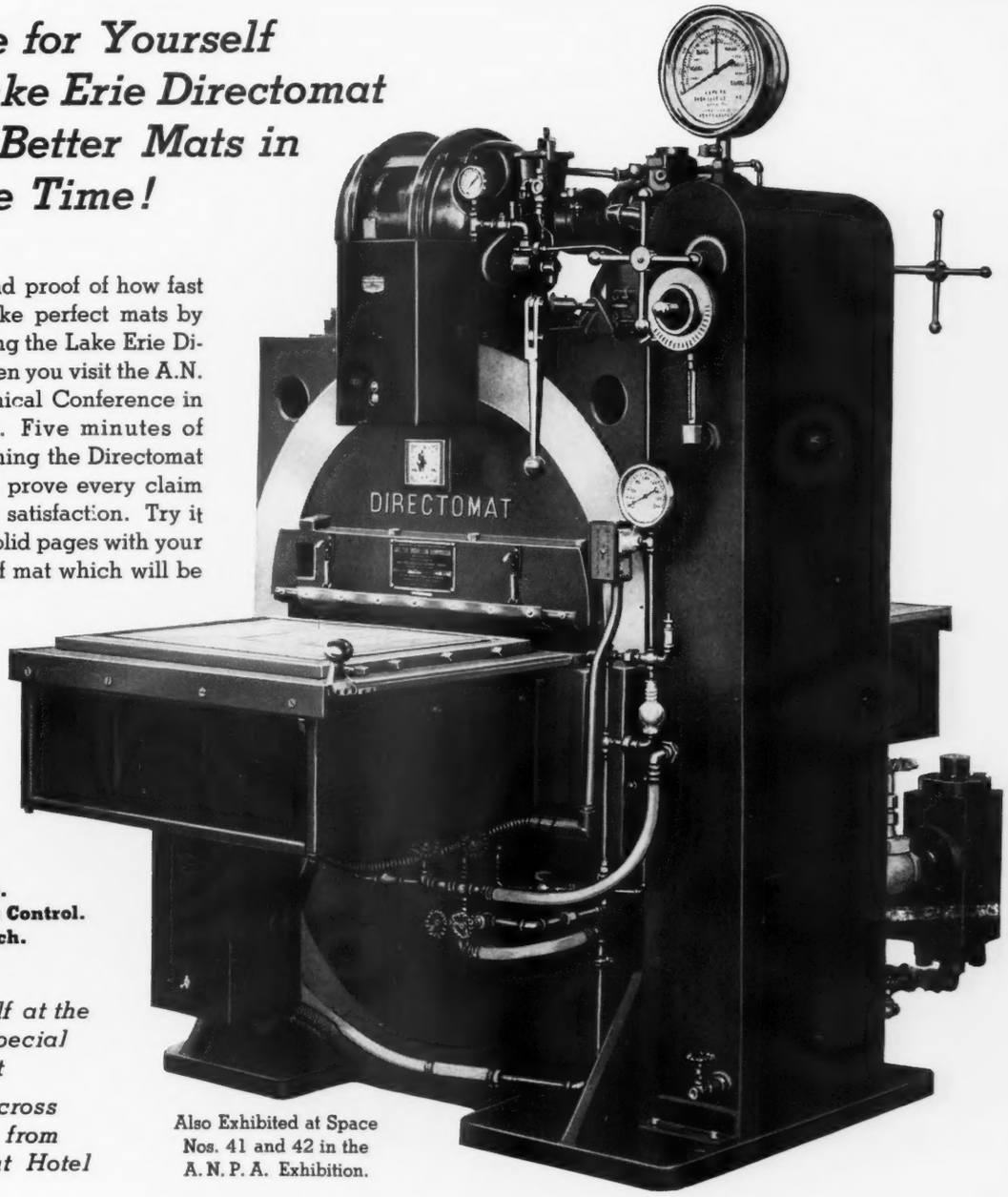
FIRM NAME.....

STREET.....CITY.....STATE.....

RUN IT YOURSELF AT PHILADELPHIA

and See for Yourself How Lake Erie Directomat Makes Better Mats in Half the Time!

Get first hand proof of how fast you can make perfect mats by actually trying the Lake Erie Directomat when you visit the A.N.P.A. Mechanical Conference in Philadelphia. Five minutes of actually running the Directomat yourself will prove every claim to your own satisfaction. Try it on open or solid pages with your own brand of mat which will be on hand.



Directomat the Successor to Mat Rollers

Twice as Fast.
Easier Operation.
Instant Pressure Control.
Eliminates Stretch.
Saves Type.

Run it Yourself at the Lake Erie Special Exhibit

Directly Across Sansom St., from Convention at Hotel

Also Exhibited at Space Nos. 41 and 42 in the A. N. P. A. Exhibition.

LAKE ERIE STEREOTYPE EQUIPMENT CO. . . . . BUFFALO, N. Y.

with the research department of the Associated Press in developing the device to transmit copy over the wires. He spent long months at a mechanical plant in Brooklyn with his assistant, W. T. White, building a typewriter and the typesetting unit. Remington Rand built the first typewriter to prepare the copy for the machine. Green had to return home and do the job over, make improvements and new designs.

To design and build precision machinery took expensive tools, precision instruments, many kinds of steel. Before he completed his latest models he had to teach himself principles of mechanics and electrical engineering he had no idea he would ever need when he began work as a machinist-turned inventor. A machine shop was equipped with precision tools. And in this shop near The Charlotte *Observer*, Johnny Green and his assistants drew pattern after pattern and machined steel for the Semagraph that a few weeks ago set type from copy written in New York.

A few days ago, reluctantly discussing his invention, Green said the typewriter was the greatest problem he had to solve. The first one was an ordinary typewriter with code characters below each letter. The second was electrically driven. A typewriter which would compensate for letters of different thicknesses was a new departure in the field. Will all the engineering and laboratory facilities at the command of manufacturing companies of such equipment, Johnny Green finally had to build his own typewriter to get one that would work satisfactorily.

How the device came to be called a Semagraph is a story in itself. As Green tells it, his backer had a man in his organization to prepare a list of suggested names. This man, a photo-engraver, submitted many names none of which were acceptable. Finally, "Semagraph," which name coined from two Greek words, *sema*, meaning code, and *graph*, meaning to write, was accepted for the name of the new machine.

Standard Pipes Make Safe Columns or Struts in the Printing Plant

By W. F. SCHAPHORST*

ORDINARY pipes often come in handy in the printing plant for use as columns or struts or for use as "push members" in transmitting forces. Due to its circular form, a pipe is ideal.

Floors of modern structures designed specially for printing plant service are amply strong for most conditions, of course, but once in a while an unusually heavy machine may be installed which will call for some special bracing even in the best of buildings, and in that event it is well to know how to make the computations.

Or, taking the more common example of a printer moving from one old building into another old building, it often occurs that the floor of the latest building is not strong enough to support the weight of the machinery. Thorough bracing is then necessary, and of course the bracing must be properly done.

However, when it come to "figuring columns," it usually takes considerable time digging around in handbooks, etc., and as a result the use of a pipe is avoided. Or, a pipe much too large or too small is used, chosen entirely by "guess." The pipe that is too small may fail and be the cause of disaster.

Those who may have occasion to use standard pipes in this way will find the following simple table and rules of value:

1. Knowing the load that is to be carried and the length of pipe needed, make a "guess," as to the size of pipe. Column A in the tables will help in making the guess as it gives the maximum length of pipe that may be used. Thus, never use a ⅛ in. pipe, as an important column, longer than 14.5 in. Never use a 3 in. pipe, as an important column, longer than 139 in., etc.

2. Multiply the length of the pipe in inches by the corresponding figure in column B of the table. This product should never be greater than 12,000. If it is greater than 12,000 it means that you have guessed a pipe that is too small. After getting the right size, proceed as follows:

3. Subtract the product from 19,000. If the difference is equal to or less than 13,000 use it, in (4). If the difference is more than 13,000 use 13,000 in (4).

4. Multiply by the figure in column C, corresponding with the pipe size.

The result is the number of lb. that the pipe will carry as a column, strut, or "push member." If the result is less than the load to be carried, try again, using the next larger pipe size, and so on until the proper and most economical size is selected.

Size of Pipes, Inches	Column A Maximum Length, Inches	Column B	Column C
⅛	14.5	826.4	0.07
¼	19.5	617.3	0.12
⅜	25.	480.8	0.17
½	31.3	383.1	0.25
¾	40.	300.3	0.33
1	50.6	237.5	0.50
1¼	64.7	185.5	0.67
1½	75.	160.5	0.80
2	94.7	126.9	1.07
2½	114.	105.3	1.71
3	139.	86.21	2.24
3½	161.	74.63	2.68
4	181.	66.23	3.18
4½	202.	59.52	3.68
5	226.	53.19	4.32

For example, it is desired to support a load of 10,000 lb. at a height of 84 in. What size of pipe should be used? Following the rules, we do this:

1. "Guessing" the size of pipe, column A, shows that 84 in. falls between 1½ in. and 2 in. pipe. We will therefore try a 2 in. pipe.

2. 84×126.9=10,650. This is less than 12,000 and we will therefore continue.

3. 19,000−10,650=8350. This is less than 13,000 and we may therefore use it in (4). If the difference were 18,350, we would have to use 13,000 in (4).

4. 8350×1.07=8950 lb.

Since 8950 lb. is less than 10,000 lb. a 2 in. pipe is too small. We will therefore recalculate, this time trying a 2½ in. pipe.

2. 84×105.3=8850

3. 19,000−8850=10,150

4. 10,150×1.71=17,370 lb.

This shows that a 2½ in. pipe would be amply safe to hold up 10,000 lb. It shows that a 2½ in. pipe is capable of holding almost twice as much as a 2 in. pipe at a height of 84 in. The small difference in pipe sizes and the great difference in strength indicates the necessity of careful computation and the danger involved in guesswork.

*Mechanical Engineer, Newark, New Jersey.

Instantaneous Ratio Computer For Printing Plant Problems

By W. F. SCHAPHORST*

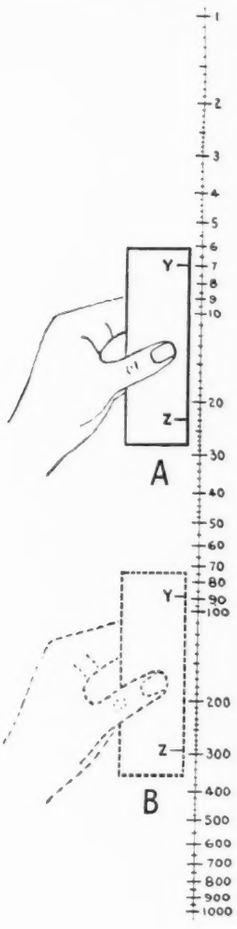
HERE is a simple and handy computer that does away with formulas and pencil figuring for solving any ordinary printing plant problem that involves ratios. It is applicable to a surprisingly wide variety of situations. The scale shown in the diagram is approximately one half-size.

For example, it will be found to be an exceedingly quick and satisfactory method for determining the sizes of two sheaves or pulleys to be used in a drive, since, in solving the problem, it is only necessary to slide a piece of paper from position *B* to position *A* or vice versa. Any slip of paper will do the trick.

Thus if you want one shaft of a given drive to run at 88 r.p.m., and the other shaft to run at 290 r.p.m., make marks *Y* and *Z* on the slip of paper in position *B* opposite the 88 and 290, as indicated—a very easy thing to do.

Now you can move the slip upward or downward and get any combination of diameters you want. The ratio will always be 88 to 290.

Thus if you happen to have a 7 in. pulley, which you think would be suitable for the 290 r.p.m. shaft, bring the *Y*-mark opposite the 7 as in position *A*. The *Z*-mark then says that the other pulley must be 23 in. diam. Naturally, the other pulley must be larger than 7 in.; therefore, position *Y* opposite 7 on the scale, then *Z* will read larger than 7, or, as in this problem, 23 in.



Of course, if these diameters are considered too small, just move the paper downward until more suitable diameters are obtained. No matter where the slip is placed, the ratio is always correct. No figuring is necessary.

The chart also lends itself readily to the solution of such a problem as, knowing the pulley diameters and knowing the speed of one of the pulleys, what is the speed of the other pulley? Try it. It is so easy that it needn't be explained in print.

Also, you can add ciphers to the figures on the scale where necessary. Just add them mentally as you go along. Thus if in the above example the speeds were 880 and 2900 r.p.m., position *B* applies in exactly the same way and you would get 7 in. and 23 in. respectively in position *A*. Very simple. But remember this: When you add a cipher to one you must also add a cipher to the other.

This computer is equally applicable to V-belt drives by using the "pitch diameters" of the sheaves. In computing V-belts do *not* base your figures on the outside diameters of the sheaves.

*Mechanical Engineer, Newark, N. J.

Keeping in Touch

GHOST COPY WRITER—The kind of advertising we like best is the kind someone else writes for us. Mr. Albert Murray, president of the Murray Printing Company, of Cambridge, Mass., did a swell job for us in his own house organ, "On the Surface." He devotes the first page of a recent issue to a story on our Everyday inks called "IPI Goes Modern." The handsome lithographed Everyday cans certainly look beautiful on the ink shelf, says Mr. Murray. In addition, they are easy to open and close, and the ink is of first quality. Thanks, Mr. Murray!

In view of the current Vitamin craze, we feel it necessary to announce another distinctive feature about IPI inks. They positively do not contain Vitamins A, B, C, D, E or G.

HOT LIPS—Certain pressmen at the Pace Press, of New York City, were all over lipstick recently. This was strictly in the line of duty, however. They were printing little lipstick sample cards for a famous Fifth Avenue cosmetician, and it was a delicate job matching the lipstick in inks. The printed lips had to look moist and tempting, so the matches were made from fresh, moist lipstick. IPI technicians did the matching job, and the resultant print was so delicious looking that Miss Hollywood 1939 would be jealous. If only they had let us match the lipstick from life!

A story in U. S. CAMERA credits a modern philosopher with this definition of a fanatic: "a person who redoubles his efforts after he loses sight of his objective."

ROSEBOWLERS REWARD—Those students down at Duke University can edit yearbooks just as well as they can play football. Duke's latest "All-America" honor is for its yearbook, THE CHANTICLER. This award is given by the National Scholastic Press Association, and THE CHANTICLER was the only annual east of the Mississippi to receive "All-America" rating. The Edwards & Broughton Company of Raleigh deserve the credit for printing this prize-winning annual. And they used IPI Holdfast ink for the job. Holdfast is ideal for yearbook printing because it helps to bring out all the depth and beauty of fine halftones.

"This is a television year," says the president of a big radio company. We may be forced to throw away our crystal set before long.

"Keep in touch with IPI."

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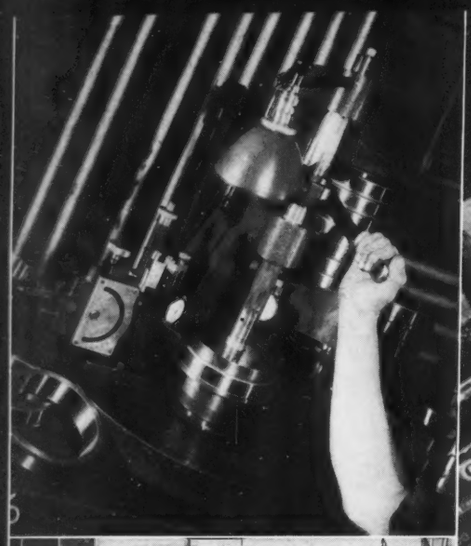

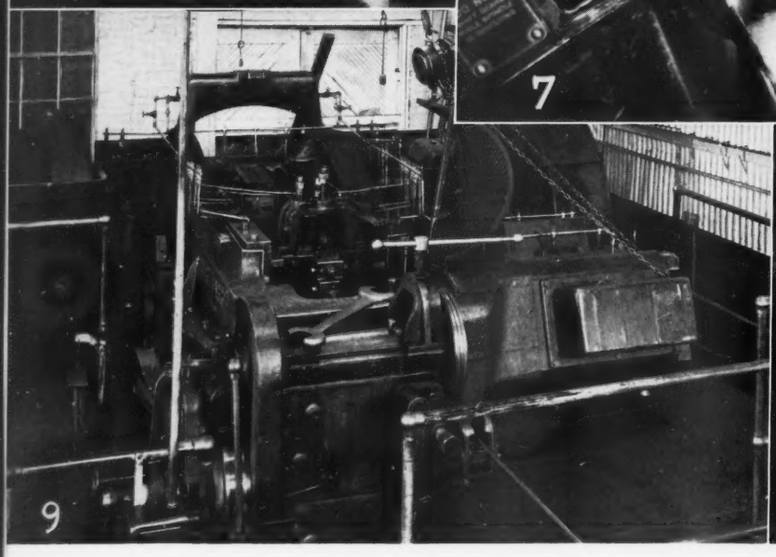

Manufacture of Anti-Friction Bearings

Some time ago *Printing* EQUIPMENT *Engineer* printed the first of two pictorial layouts illustrating several steps in the manufacture of tapered roller bearings. The second installment is presented here. Views were taken in plant of Timken Roller Bearing Company, Canton, Ohio.

6. Concentricity Gauge—Three inspections at a single set-up not only assures speed but accuracy. Here we see a bearing cup being checked for concentricity, stand (or width) and taper at a single operation. Checked every day for accuracy with master gauges, each measurement made by this multiple gauging device is shown in terms of tenths of thousandths of an inch—thirty times finer than a human hair.

7. Cup Grinding—An accurate fit in the housing is essential to the perfect operation of a bearing. Here the Timken bearing cups are being ground to size in one of the special centerless grinders. These machines, as well as the product, are constantly checked to assure sustained uniform accuracy.

8. Carburizing—A necessary step in the manufacture of an anti-friction bearing is that of providing a dense, hard, wear-resistant surface. To secure such a surface the steel must be high in carbon. Timken industrial bearings are soaked for long hours at white heat in a carbon-rich atmosphere, where the surface picks up carbon but the body remains tough and resilient. Here we see a charge just emerging from one of the specially designed vertical carburizing furnaces.

9. Cold Roll Heading—It takes less than 2 seconds to form a tapered roll 1¼ in. maximum diameter and 2¼ in. long from rod stock 1 7/32 in. diameter in this giant cold roll header in the plant of Timken Roller Bearing Co., Canton, Ohio. Striking a 30-ton blow on the end of the cold slug, driving it into the tapered die and shaping it to the desired contour requires a heavy machine.

10. Roll Gauging—Every roll (and millions are used every day in the Timken plant) is checked for accuracy of taper and diameter. Here we see two of the gauging operations which medium size rolls for heavy duty industrial bearings must pass. Split hair accuracy—to the hundredth part of a human hair—is vital. Skilled operators, gloved to avoid even the possibility of etching the highly finished roll surfaces, inspect every roll that goes into any Timken Bearing, checking their gauges with master plugs finished to an accuracy of one part in a hundred thousand!

Press to be Equipped With Ball Bearing Roller Cores

The Goss Printing Press Company will equip the new color press on order for the *Greater Buffalo Press* with Hart's ball bearing roller cores which is said to be the first press in the state of New York, outside New York City, fully equipped with these cores.

Flintglo Process Inks

Folder consisting of three stepped leves shows with illustration for each color and black the effect to be obtained with Flintglo Process Inks. Printed on Miehle Vertical—not varnished. Copy will be sent to any interested printing executive. *P-Double-E File No. 5W15.*

Webendorfer Offset Press Prints Smallest Daily

What is one of the smallest, if not the smallest, daily newspaper in the country is now added to the list of publishers who operate Webendorfer-Wills offset equipment. The little daily which is named the "Washington State Register" carries the news of the town of Yakima, Washington. It consists of four pages and measures approximately 10 in. by 17 in. when folded.

Speaks to Newark Printers

In an optimistic vein, Frederick B. Heitkamp, vice president of American Type Founders, recently told the Master Printers Association of Newark "How to get the most out of 1939." Addressing the group at the Newark Athletic Club, he predicted better opportunities during the remainder of the year but pointed out the need for an energetic approach to them.

It's New England Today in Press Packing

The above claim is not made boastingly, but as a matter of fact.

To lead a great industry like the Newspaper industry is an honor won only by giving better packing to do a better job.

To produce better printing it is necessary that you use originals, not imitations. You will make no mistake when you use any of the following press blankets.

Regular Automatic Felts
Stipple Faced Felts
Regular Automatic Tympans
Stipple Faced Tympans
Silk Tex Tympans
DeLuxe Monocorks
Oil-proof-face Rubber
Italian Red Rubber
Bismark Brown Rubber

These blankets can be used in any combination that best suits your needs.

Known—Sold and Used all over the World.

NEW ENGLAND
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BRANCH OFFICES

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Chicago.....Daily News Building
Portland, Oregon.....417 Oregonian Bldg.
San Francisco.....205 De Young Building

MERCURY ROLLERS
FOR ALL BRANCHES OF THE GRAPHIC ARTS

RAPID ROLLER CO.
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26th at Federal St.
Chicago, Illinois

Technical knowledge important in selecting photos for engraving

Photographs and engravings courtesy of Minneapolis *Star*.

IV.

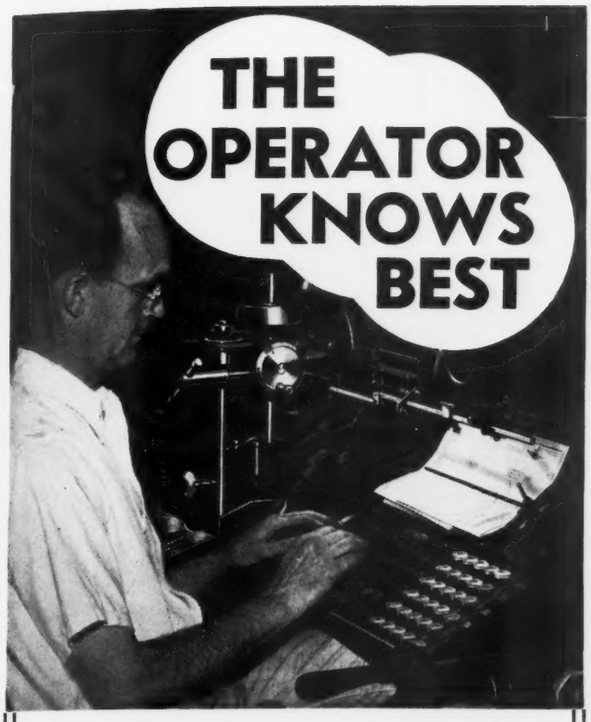
MANY years ago, photography was viewed as a mysterious and somewhat nefarious occupation—something akin to black magic. After Eastman popularized "You push the button, we will do the rest," the trade mark *Kodak* followed to become a national byword. Gradually, this very secret process became simple enough for a child of twelve to become adept at snapping "pitchers" and developing them in the bathroom at home.

The apparent simplicity of modern photography provides many headaches and arguments because the fundamental facts are completely ignored. Photography today is more an art than ever before, because the possibilities are constantly extended into channels unknown years ago. Fixed focus cameras, packaged developers and other aids have enabled many thousands to build a hobby for themselves and few have delved into the subject sufficiently to really understand the principles and how to accomplish a desired uniform result. Psychology plays an important part in the judgment of photographs and the greatest error is that of not examining the photograph objectively. If the person or view shown on the photograph is well known to the individual examining the print, details are usually seen which are non-existent or so faint as to be barely distinguisable.

Technical knowledge is important, as an understanding of the reproductive process will eliminate many bad prints and save many hours of non-productive work in the engraving room. A "nose for news" in photographs is essential as quite frequently the poorest photograph from a technical standpoint is the best for reader interest.

The question of photographs submitted to engraving departments has been the subject of many discussions at mechanical conferences and when our staff writer visited the Minneapolis *Star*, the subject popped up immediately in conference with Mechanical Superintendent Jorgensen and Engraving Superintendent Curriden. To illustrate the simplicity of checking comparative reproductive qualities of different types of prints, three prints of varying contrast were made from the same negative in the *Star's* photograph department, pasted on a card and photographed and etched as one copy in the engraving room.

The first on the left of the engraving shows a contrast print, the center a soft print and the third a normal print. All three prints were examined by approximately a dozen people and opinion was about equally divided as to which print was the best. This explains the moans and groans of the engraver when more than one person is in charge of copy selection as this variation of copy precludes the possibility of grouping any quantity of copy as an aid to time-saving and cost reduction.



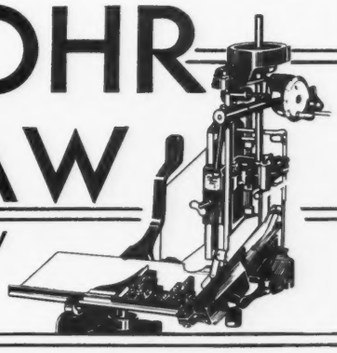
HE can vouch for the easy operation, time saving and speedy production of MOHR SAWS.

Get him to tell you how easily odd-measure type areas can be handled and how neatly and efficiently the 100% AUTOMATIC SLUG SAWING operation turns out finished composition . . . ready for use.

- Your very first reaction will be a recognition of the time-saving feature and, naturally, time saved means dollars saved.
- A quick setting dial provides convenient control for all necessary adjustments. The dial sets to points or split-points if needed.
- Every feature of the MOHR SAW helps to speed up and simplify production.

In justice to your business you should write for details of the current Model D Mohr Saw—made better than ever by more than 100 carefully engineered improvements and refinements. Learn how it helps you meet deadlines and reduce composing room expense.

MOHR SAW



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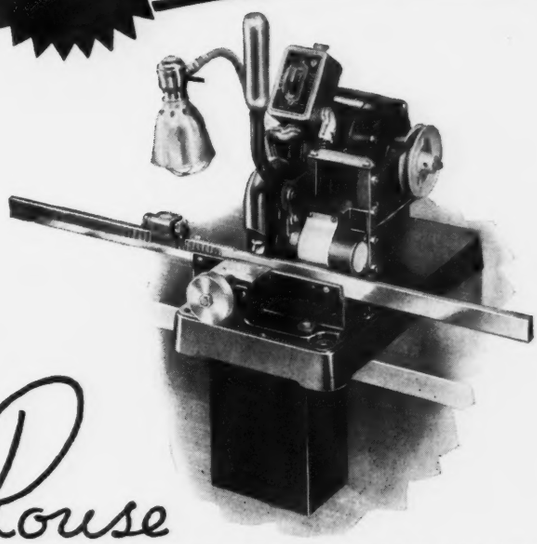
NEW ECONOMY MODEL



Rouse VERTICAL ROTARY MITERER

Cuts 700 perfect miters an hour direct from strip material. It is as accurate as the Rouse Master Vertical Rotary Miterer, yet it may be installed at a generous saving.

The NEW Economy Model Rouse Vertical Rotary Miterer is recommended for smaller plants, or for large plants where several machines will cut down walking time.

Complete information on the NEW Economy Model Rouse Vertical Rotary Miterer will be sent upon request.

ROUSE BAND SAW

The No. 2 Rouse Band Saw, which cuts 7 inches of slugs to variable measures in 18 seconds, is practical in plants not requiring the capacity of the No. 1, and offers an attractive saving.

While the capacity is less than that of the No. 1, which cuts a full galley in 35 seconds, the operation is identical.

Slug length selection is automatic, and feed is mechanical. Slugs may be the same length or all different, yet there is no setting of gauges, or reclamping for different measures.

Write for prices and complete details, or see the Rouse Band Saw and the Rouse Vertical Miterer in operation at the A.N.P.A. Mechanical Conference.

H. B. ROUSE & COMPANY
2216 North Wayne Avenue - Chicago, Illinois

Patents

Recently Granted by U. S. Patent Office

Bookbinding:

2,154,516. BINDING. Charles L'Enfant, New York, N. Y. Application October 3, 1936, Serial No. 103,874. 2 Claims. (Cl. 281—21.)

1. A book comprising inner signatures, end signatures, and means securing the signatures together, the end signatures comprising sheets folded upon themselves along their median line, an outer folded sheet of composition fabric, stitching securing the inner portion of the outer sheet to an end signature outwardly of the folded portion thereof, the stitching engaging through one-half of the sheets of the end signature, a cover adhesively secured to one-half portion of the outer fabric sheet and a tubular tunnel member adhesively secured to the folded end portions of the inner and end signatures and to that portion of the cover confronting the inner and end signatures.

Composing Machines:

2,154,728. MATRIX STORAGE SYSTEM FOR TYPE MAKING MACHINES. Guy C. Coleman and Hugh Foster, Los Angeles, Calif. Application June 30, 1937, Serial No. 151,084. 10 Claims. (Cl. 276—44.)

1. In a system for transferring type matrices to and from a standard type making machine magazine, a standard magazine having a plurality of grooves for guiding and holding matrices, the grooves being flared outwardly at their entrance ends, a storage magazine having a plurality of matrix receiving grooves alignable with the grooves of the standard magazine, a transfer member disposed between the entrance ends of both the magazines and having means defining a plurality of matrix guiding grooves alignable with the grooves of both the magazines, and a plurality of fingers on the transfer means extending into the flared ends of the standard magazine grooves to form therewith continuous substantially uniform width grooves between the transfer member and the standard magazine.

2,155,588. TYPOGRAPHICAL COMPOSING AND DISTRIBUTING MACHINE. Frank C. Frolander, Elizabeth, N. J., and Harold A. Burt, St. Albans, N. Y., assignors to Mergenthaler Linotype Company, a corporation of New York. Application April 28, 1937, Serial No. 139,436. 32 Claims. (Cl. 199—20.)

1. In a typographical composing machine, the combination with a pair of superposed inclined matrix magazines provided each with a set of escapements, of an assembler entrance including a relatively fixed section to receive matrices discharged from either magazine and a pivoted section adjustable to two different positions to make and break an operative connection between the fixed section and either one of the magazines, escapement actuating devices carried by the pivoted section and movable therewith to two different positions to make and break an operative connection with the escapements of either magazine according to the position of adjustment of the pivoted section, the escapement actuating devices being in non-radial relation with the pivotal axis of the pivoted section, and means for maintaining a radial relation of the escapement actuating devices with an axis offset from the pivotal axis as the section is adjusted from one position to another.

2,155,589. TYPOGRAPHICAL COMPOSING AND DISTRIBUTING MACHINE. Frank C. Frolander, Elizabeth, N. J., and Harold A. Burt, St. Albans, N. Y., assignors to Mergenthaler Linotype Company, a corporation of New York. Original application April 28, 1937, Serial No. 139,436. Divided and this application December 2, 1937, Serial No. 177,742. 8 Claims. (Cl. 199—40.)

1. A typographical composing machine including in combination, a series of three or more superposed magazines containing matrices provided with notches differently located for different fonts, a frame for supporting the magazines and movable to bring different pairs thereof into operative position, a pair of matrix distributors serving the magazines in operative position, means for routing the matrices according to font for distribution by the distributors, the means including a single element adjustable to different positions so that for a given pair of magazines in operative position it will register with the notches in the matrices of one magazine and be out of register with the notches in the matrices of the other magazines, so as thereby to separate the matrices of the different fonts for proper routing to their respective distributors, and automatic means for adjusting said element as different pairs of magazines are brought into operative position.

2,156,638. TYPE CASTING MACHINE. Shipley Myers and Albert Frederick Camp, London, England, assignors to The Kingsbury Engineering Company, Limited, London, England. Application November 9, 1937, Serial No. 173,555. In Great Britain March 2, 1937. 13 Claims. (Cl. 199—95.)

1. The combination with a type casting machine for making type castings presenting a plurality of different characters, a single casting presenting a single character, which machine includes mechanical control means actuatable to selectively determine the character presented by a casting discharged from the machine, of means for delivering castings discharged from the machine into a compositor's tray comprising a plurality of compartments and means actuatable in response to actuation of the control means adapted to determine the compartment of the tray into which the castings are delivered according to the character presented by the castings as selectively determined by the control means.

2,157,782. HAND COMPOSITION OF MATRICES FOR TYPOGRAPHICAL SLUG-CASTING MACHINES. John Ernest Billington, deceased, late of Crewe, England, by Mary Ellen Billington, executrix, Crewe, England, and Richard Henry Scott, Enfield, England, assignors to Linotype and Machinery Limited, London, England, a British company. Application August 6, 1937, Serial No. 157,756. In Great Britain August 14, 1936. 13 Claims. (Cl. 199—49.)

1. A hand-stick for composing a matrix line to be transferred to a typographical slug casting machine comprising an immovable base for receiving the matrices and spacebands and a relatively movable member extending therefrom to form a support for the spacebands, the support being of substantially the same longitudinal dimensions as the base and located in substantially coplanar relation therewith.

2,157,795. TYPOGRAPHICAL MACHINE. Richard R. Mead, Queens Village, N. Y., assignor to Mergenthaler Linotype Company, a corporation of New York. Application December 31, 1937, Serial No. 182,691. 20 Claims. (Cl. 199—45.)

1. A typographical machine including, in combination, a shift frame, a plurality of independently removable matrix magazines carried by the frame, a corresponding plurality of escapement banks mounted in the shift frame in operative engagement with the magazines, mechanisms carried by the shift frame in association with each magazine for lifting the individual magazines out of engagement with their corresponding escapement banks preparatory to removal or replacement, and common devices mounted on a relatively fixed part of the machine for selectively operating the respective magazine lifting mechanisms.

Feeding, Folding, Delivery:

2,154,485. SHEET FEEDER. Frank R. Belluche, Racine, Wis. Application October 28, 1937, Serial No. 171,507. 21 Claims. (Cl. 271—55.)

1. In a sheet feeder for printing machines and the like, the combination of: conveying means for advancing sheets along a defined path for presentment to the machine; and means movable along the same path in the direction of the sheet advance and at a speed slightly in excess of that of the sheet advance for engaging the trailing edge of the sheet nearest the machine and operable to present the sheet to the machine and effect registration thereof prior to its presentment to the machine.

2,156,139. SHEET FEEDING MACHINE. Headley Townsend Backhouse, London, England. Application November 3, 1937, Serial No. 172,551. In Great Britain November 17, 1936. 6 Claims. (Cl. 271—27.)

1. In mechanism for feeding sheets to a printing press or other sheet handling machine of the type in which means are provided for separating and lifting rear portions of the uppermost sheet and forwarding the sheet to advance its front edge to delivery position, and in which means are provided for winding the uppermost sheet after its rear portions are separated from the pile, a smoother arranged above the pile extending in the direction of movement of the sheets, and means for causing said smoother to travel forward during the forward travel of the sheet.

2,157,849. SHEET FEEDING APPARATUS. Yngve A. F. Danielsson, Goteborg, Sweden, assignor to Aktiebolaget Westerlin & Co., Goteborg, Sweden. Application July 26, 1937, Serial No. 155,771. 3 Claims. (Cl. 271—12.)

1. A sheet feeding apparatus comprising a sheet separator and a main feeding device, a feeding roller and conveyor belts combined so as to produce an overlapping motion to the sheets fed thereto at regular intervals, means for giving an irregular feeding speed to the sheets and comprising pivotal links, a train of circular gear wheels on the links, the gear at the free end of the links geared to the feed roller and conveyor belts, a connecting rod pivoted to a fixed pivot at one end and having a crank pin on the opposite end engaging in a longitudinal slot provided in one of the wheels causing the links to oscillate, resulting in a periodical variation of the speed of the sheets, whereby the main feeding device passes a sheet over the feeding roller to the conveyor belts.

Miscellaneous:

2,150,974. CAMERA. William C. Huebner, New York, N. Y. Application August 31, 1936, Serial No. 98,690. 12 Claims. (Cl. 88—24.)

1. In a camera the combination with relatively stationary supporting means; of a frame of generally T-form; resilient means interposed between the supporting means and the T-frame approximately at the ends of the two arms of the T and at the free end of the stem, respectively, to thereby provide resilient supports at three points; copy-holding means, lens-holding means and sensitized element holding-means all supported and depending from the T-frame, the lens-holding means and copy holding-means being horizontally adjustable lengthwise of the stem of the T-frame and the sensitized element holding-means being located adacent the arms of the T-frame; a track, supported by and positioned below the T-frame adjacent the sensitized element holding-means of the arm end of the T-frame and extending horizontally and transversely of the stem of the T-frame continuously from one side to the

Patent Papers

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Glare Is Objectionable in Printing Plant

*WALTER B. LANCASTER, M. D.

GLARE is very objectionable and not tolerated in good lighting practice. Glare out of doors is due to great excess of light, as sun on snow, or on water, or on sand, or on a light pavement, or from headlights. Glare indoors is seldom due to too much light. It is almost always due to poor distribution, such as bare, exposed bulbs, even if frosted, so located as to be within the range of vision of the worker. In general the eyes prefer diffused light free from strong contrasts and harsh shadows. Concentrated sources of high brilliancy, even if not in the range of vision, are disagreeable. They favor glare from specular reflection. Specular reflection is reflection like a mirror, where the angle of reflection equals the angle of incidence. The other kind of reflection is duffuse reflection. Paper is apt to be smooth and shiny enough to have considerable specular reflecting power. If the light falling upon it is from a concentrated source, a specular glare results. But, even if the light and paper are so placed that the reflection is thrown in a direction which does not meet the eye, still the nonspecular part of the reflection is trying to sensitive eyes. Such eyes require well-diffused light from a large source.

*Boston, Mass. Abstracted from *Lighting Standards* article appearing in the *Americau Journal of Ophthalmology*. Reprinted by permission of *Magazine of Light*.

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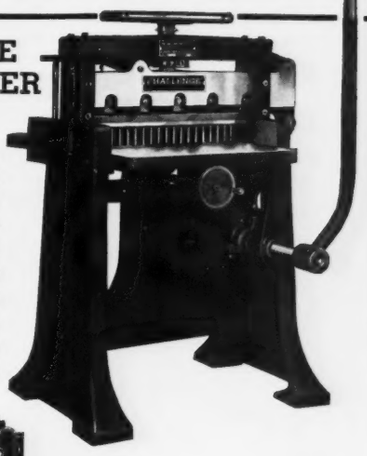

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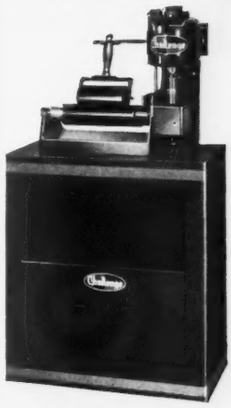

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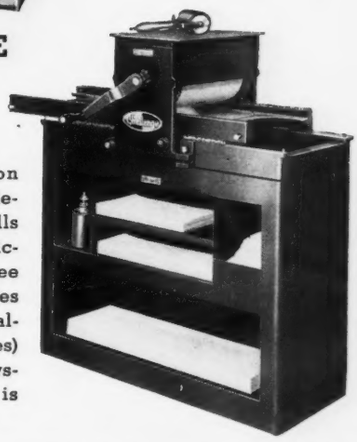

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other side of the lens axis; and means for holding a screen mounted on the track, the screen holding-means being movable to the T-frame horizontally and transversely of the stem on the track from one side of the axis of the lens to the other side whereby shift, lengthwise, transversely, or both, relative to the stem of the T-frame, of the effective center of weight of all of the holding-means, which are in a depending position with respect to the T-frame, is accommodated by the resilient three point support substantially without twisting of the T-frame.

2,151,028. PRINTING AND PUNCHING REGISTERING APPARATUS. Ralph A. Hayward, Parchment, Mich., assignor to Kalamazoo Vegetable Parchment Company, Parchment, Mich. Application September 27, 1937, Serial No. 165,881. 29 Claims. (Cl. 101—226.)

1. A printing and punching machine comprising a printing plate cylinder, an impression roll therefor, a rotary punching device and a rotary forwarding device at the rear of the punching device, means for driving the cylinder and devices in synchronism at equal surface speeds, the punching device comprising a pair of cylinders having coacting punches and dies spaced peripherally thereof, the forwarding device comprising a cylinder having pins projecting therefrom and spaced in accordance with the spacing of the punches and dies of the punching device whereby the pins enter holes formed in a continuous web by the punching device, a web supply roll in advance of the plate cylinder, and a web rewind roll at the rear of the forwarding cylinder, the supply roll having a manually adjustable brake associated therewith to vary the drag on the web as desired and thereby compensate for web creep at the printing cylinder and impression roll tending to destroy registry of the holes and the printed impression on the web, a slip friction drive from the driving means to the rewind roll whereby to synchronize the rewind roll with the devices comprising pulleys associated with the driving means and rewind roll, a belt passing therearound and a take-up roller, and manually controllable means for adjusting the take-up roller.

2,151,986. DROSS SIFTER. Leonard G. Olander, Minn., assignor to The Monomelt Company, Incorporated, Minneapolis, Minn., a corporation of Minnesota. Application June 22, 1936, Serial No. 86,614. 3 Claims. (Cl. 209—324.)

1. A sifting device for a dross drum, which drum has a cylindrical top and an inwardly projecting flange a short distance below the top having in combination, a member having a cylindrical portion constructed and arranged to fit into the drum within the flange and having an outwardly extending flange thereabout adapted to rest on top of the drum, the member having a second cylindrical portion extending upwardly from the flange and having a second flange extending inwardly therefrom, a sifter having a flat screen, a cylindrical wall surrounding the same disposed within the second cylindrical portion and terminating short of the top thereof and having a flange resting on the second flange for oscillation thereon, a handle secured to the sifter for oscillating the same and extending outwardly through a slot in the second cylindrical portion, an imperforate cover having a cylindrical wall fitting about the second cylindrical portion, resting thereon and readily removable therefrom, the cover having a bearing centrally disposed in its top, a shaft extending through the bearing, a rotatable stirrer having a plurality of circumferentially spaced arms disposed within the sifter and above the screen and carried on the lower end of the shaft and a crank handle secured to the shaft above the cover.

2,152,770. DRYING METHOD AND APPARATUS. Bernard Offen, Chicago, Ill. Application February 14, 1935. Serial No. 6,453. 10 Claims. (Cl. 34—48.)

8. A method of drying a freshly printed paper web which consists in forcing a current of air along the freshly printed side of the web while substantially confining the air current to the printed side, and then exhausting the air current away from the web, the rate of exhaust exceeding the rate of supply of air by the current.

2,153,130. ROTOGRAVURE INK. Ernest Loring Baxter, Rochester, N. Y., assignor to Eastman Kodak Company, Rochester, N. Y., a corporation of New Jersey. No Drawing. Application October 2, 1937, Serial No. 167,015. 4 Claims. (Cl. 95—9.)

1. Photographic backing paper carrying indicia composed of a non-hardened prolamine and coloring matter, overcoated with a water-soluble colloid.

2,153,597. PRINTING. Oswald R. Schultz, New York, N. Y., assignor to Cellu-Type Plate Co., Inc., Union City, N. J., a corporation of New York. Application August 28, 1933, Serial No. 687,025. 7 Claims. (Cl. 101—426.)

1. The process of decorating metallic and stone surfaces which includes, providing a printing plate composed of cellulosic materal, applying quick drying intaglio ink to the printing surface thereof, and transferring the ink deposited on the plate directly on to the surface to be decorated.

2,154,363. NONOFFSET SPRAYING DEVICE. Frederick W. Seybold, Westfield, N. J., assignor by mesne assignments, to Binks Manufacturing Company, Chicago, Ill., a corporation of Delaware. Application April 2, 1936, Serial No. 72,401. Renewed February 6, 1939. 8 Claims. (Cl. 101—416.)

1. Anti-offset printing apparatus comprising a bed and cylinder press, an air cushion cylinder supported at each end of the press and each adapted to cooperate with a piston on its end of the bed, an air tank, a pipe from each cylinder to the tank, a check valve in each pipe opening toward the tank, a relief valve on the tank, a spray nozzle directed to deliver anti-offset liquid toward a sheet freshly printed by the press, means connecting the air reservoir and nozzle to deliver air for atomizing the liquid, valves adjacent the nozzle to control the flow of air and liquid thereto, a controller adjacent the press cylinder, means on the cylinder to actuate the controller once per revolution, and a connection from the controller to the valves to operate the valves with the rotations of the press cylinder.

2,154,866. PRINTER'S INK. Heinrich Renck, Hamburg, Germany. No Drawing. Application June 3, 1936, Serial No. 83,330. In Germany October 19, 1935. 1 Claim. (Cl. 134—35.)

A printer's ink for printing by means of a printing plate which has amalgamated ink-repellent surfaces, the ink comprising a printer's ink with a soft amalgam of mercury and silver, the amalgam being in an amount to effect regeneration of the amalgamated ink-repellent surfaces.

2,154,898. METHOD AND APPARATUS FOR COLOR PHOTOGRAPHY. Samuel B. Grimson, New York, and Leo Lipp, Flushing, N. Y., assignors to Color Research Corporation, New York, N. Y., a corporation of Delaware. Application April 2, 1937, Serial No. 134,544. 4 Claims. (Cl. 88—24.)

1. A method of producing a black and white color positive film, which comprises projecting images from a developed lenticulated negative onto a revolving ground glass screen, masking a portion of the projected beam to form a red image on the moving screen, photographing the red image upon a portion of an unexposed positive film, masking another portion of the projected beam to form a blue-green image on the moving screen, photographing the blue-green image upon another unexposed portion of the positive film, and developing the positive film.

2,154,999. COMPOSING ROOM SAW. Frederick W. Seybold, Westfield, N. J., assignor to American Type Founders, Incorporated, Elizabeth, N. J., a corporation of New Jersey. Original application May 21, 1936, Serial No. 81,069. Divided and this application March 12, 1937, Serial No. 130,606. 2 Claims. (Cl. 51—92.)

1. In a machine, in combination, a grinding wheel, a table having a guide groove parallel to the axis of the wheel, a trimmer knife holder comprising a body having a tongue, fitting, and slidable in the groove and means to clamp a plurality of trimmer knives to the holder with their non-cutting ends in a plane parallel to the axis of the wheel and having recesses in its top surface to receive trimmer knives each with its axis at right angles to a plane containing the axis of the wheel, an inverted L-shaped clamp member having a shoulder on the underside of its horizontal leg engaging the non-cutting ends of the knives, means co-operating with the vertical leg of the member supporting the same for adjustment toward and from the wheel and means to lock the member in adjusted position with the knives clamped in the groove by the horizontal leg.

2,157,097. INGOT FOR FEEDING MACHINES. Albert H. Jung, Flushing, N. Y., assignor to United American Metals Corporation, Brooklyn, N. Y., a corporation of New York. Application March 5, 1938, Serial No. 194,022. 2 Claims. (Cl. 22—218.)

2. A one-piece ingot provided with a deep longitudinal groove dividing the ingot into two longitudinally arranged halves and with a series of shallower transverse grooves in each half, each of the transverse grooves of one half being staggered intermediate a pair of the transverse grooves of the other half.

2,157,385. METHOD OF PRINTING. Albert E. Gessler, Ardsley-on-Hudson, and Albert F. Guiteras, New York, N. Y., and Charles F. Clarkson, Philadelphia, Pa., assignors to Interchemical Corporation, a corporation of Ohio. Application July 25, 1935, Serial No. 33,078. 23 Claims. (Cl. 101—416.)

1. The method of setting a printing ink whose vehicle comprises a binder dissolved in a solvent which is stable on the press, which consists in diluting the solvent of the ink on the printed matter with a more volatile non-solvent to precipitate the binder, and removing the greater part of the mixture of solvent and non-solvent from the precipitated binder before evaporation of the non-solvent.

2,157,387. METHOD OF SETTING COLORING AND COATING COMPOSITIONS. Charles J. MacArthur, Glen Ridge, N. J., assignor to Interchemical Corporation, a corporation of Ohio. Application January 22, 1937, Serial No. 121,832. 10 Claims. (Cl. 101—416.)

1. A method of setting a printing ink and the like, including a solid component and a solvent therefor, which comprises diluting the ink on the printed material with a fluid which is miscible with the solvent and which is a non-solvent for the solid component, supporting the printed material substantially throughout its entire treated area during the diluting operation and removing substantially all the diluting fluid while the printed material is so supported.

2,157,388. METHOD OF PRINTING AND SETTING A PRINTING INK. Charles J. MacArthur, Glen Ridge, N. J., assignor to Interchemical Corporation, a corporation of Ohio. Application January 22, 1937, Serial No. 121,833. 10 Claims. (Cl. 101—416.1.)

1. Method of setting a printing ink and the like containing a binder and a solvent, which comprises heating the ink on the printed material to remove solvent therefrom, and applying to the printed material a moistening fluid which is miscible with the solvent and which is a non-solvent for the binder.

Plate Making:

2,155,094. GRAPHIC METHOD AND MEANS. Fred W. Kiessling, Cleveland Heights, Ohio. Application June 24, 1936, Serial No. 87,033. 2 Claims. (Cl. 95—5.)

2. A method of reproducing printed matter which comprises optically displacing lines of such printed matter and optically altering the angular relationship of characters with respect to alignment of the lines and also optically altering the mutual angular relationship of strokes of the characters, photographing lines so altered, separating such photographed lines and thereafter reassembling such separated lines on a common sheet while retaining the character alterations.

2,155,392. METHOD OF FORMING PRINTING CYLINDERS. Ernest S. Ballard, Berkeley, Calif., assignor to Standard Process Corporation, Chicago, Ill., a corporation of Delaware. Original application April 16, 1928, Serial No. 270,367. Divided and this application November 30, 1932, Serial No. 645,077. 4 Claims. (Cl. 204—6.)

1. A printing cylinder consisting of a base provided with a barrier layer of nickel polished to a mirror-like finish, and a layer of copper electro deposited on the base, the layer having a thickness not materially greater than just sufficient to permit the etching therein of the printing surface in the copper layer.

3. The method of providing a printing cylinder with a copper layer suitable for etching, which consists in providing a cylindrical base with a passivating layer of nickel having a smooth-polished finish resistant to the action of the electrolyte of a copper electroplating apparatus, immersing the cylinder in the electrolyte of a copper electroplating apparatus, rotating the cylinder on a substantially horizontal axis through the electrolyte at a relatively high surface speed in manner to cause a continual circulation of the electrolyte during the deposition of the copper and to allow of a voltage which will insure a high current density, and causing current of approximately two hundred amperes per square foot of cylinder immersed in the electrolyte to flow until a dense non-porous layer of copper of sufficient thickness is produced without burning.

2,155,458. METHOD OF AND APPARATUS FOR PRINTING. William J. Wilkinson, Eastchester, N. Y., assignor of one-half to Miehle Printing Press and Manufacturing Company, Chicago, Ill., a corporation of Illinois. No Drawing. Application August 13, 1935, Serial No. 36,019. 17 Claims. (Cl. 95—5.7.)

1. In the method of making a hemi-tone positive-transparency for use in the preparation of an intaglio printing-plate, the steps of spacing a screen in front of a light-sensitive photographic-plate at such a distance therefrom and exposing the plate through the screen to light controlled by a continuous-tone negative of the original subject to be reproduced for such a period of time, the space and exposure both being sufficiently less than would produce an ordinary halftone positive-transparency with the other conditions the same, that the exposed plate, when developed, will represent the solids, if any, of the subject at substantially one-half tone value by relatively-large practically-unconnected dots and will represent all lesser tones of the subject by dots of corresponding lesser areas, and developing said exposed plate to produce a positive-transparency having the characteristics, all the dots being of substantially the same density.

2,156,836. PROCESS FOR MATRIX FORMING AND BEARER FOR THE SAME. Clarence E. Boutwell, Birmingham, Ala. Application October 26, 1936, Serial No. 107,606. 3 Claims. (Cl. 41—25.)

1. A bearer for printing setups in making matrices from metals, resins and the like involving pressures endangering the type characters comprising a plurality of similar side pieces and similar corner pieces adapted to be placed end to end around a printing setup and form a continuous bearer therefor, each of the bearer pieces having a vertical inner wall adapted to bear against the side of the printing setup and being shoulder high to the printing surface, an upper surface sloping downwardly from the vertical inner wall and intersected by a vertical side wall to form a groove having a capacity sufficient to accommodate laterally displaced matrix material, and a flat outer, upper surface equal in height to the printing surface to impede further flow of matrix material.

2,157,327. MATRIX MOLDING MACHINE. Hobart N. Durham, Manhasset, N. Y., assignor to The Goss Printing Press Company, Chicago, Ill., a corporation of Illinois. Application March 9, 1936, Serial No. 67,810. 4 Claims. (Cl. 60—52.)

1. A matrix molding press including in combination relatively movable platens, a hydraulic plunger for moving one of the platens, a high-pressure centrifugal pump for supplying liquid to the plunger, means for driving the pump at a plurality of different speeds, a polarized relay for controlling the driving speed, and means operated by the pump pressure for controlling the relay to reduce the motor speed and pump pressure after a maximum pressure has been reached.

2,158,039. PHOTOGRAPHIC TYPE-COMPOSING MACHINE. Lajos Wenczler, Augsburg, Germany, assignor to Uhertype Aktiengesellschaft of Kubli House, Glarus, Kanton Glarus, Switzerland, a corporation of Switzerland. Application December 5, 1936, Serial No. 114,440. In Germany December 9, 1935. 4 Claims. (Cl. 95—4.5.)

1. A photographic type-setting machine, comprising in combination with the machine frame and a film-box movable therein, a movable matrix-plate having the characters to be exposed arranged thereon checkerboard fashion and disposed at an angle relative to the sensitized film in the film-box, a fixing plate having perforations corresponding in number and position to the characters on the matrix-plate, the fixing plate and the matrix plate being secured together in parallel planes and movable as a unit in directions parallel to the planes, a means cooperating with the perforations in the fixing plate for holding the latter and the matrix-plate in fixed position with one of the characters on the matrix-plate placed in the optical axis, a source of light, and means adapted to deflect the light rays so as to

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cause it to strike first the matrix-plate and then the sensitized film.

Printing Presses:

2,151,390. INTAGLIO WEB PRINTING MACHINE. Claus F. Peterson, Chicago, Ill., assignor to Neo-Gravure Printing Co., Inc., New York, N. Y., a corporation of New York. Application October 7, 1936, Serial No. 104,547. 19 Claims. (Cl. 101—152.)

1. In a printing machine, cooperating form and impression printing cylinders, means for guiding a web to and from the printing cylinders, and a plurality of heating rollers smaller than the form cylinder positioned immediately adjacent each other and the printing cylinders to engage the printed web at a plurality of points immediately it leaves the printing cylinders to dry the ink deposited on the web during the printing operation.

2,151,411. PLATE INKING DEVICE AND METHOD. Charles P. Shaw, Detroit, Mich., assignor to Detroit Moulding Corporation, Detroit, Mich. Application February 24, 1936, Serial No. 65,244. 6 Claims. (Cl. 101—363.)

1. In an inking mechanism for inking a relief or surface printing plate, a carriage adapted to be translated past a printing plate to be inked, a plate inking roller journaled in the carriage for rolling contact with the plate, a supply roller journaled in the carriage in rolling contact with the plate inking roller, the surface of the supply roller being minutely grained, an adjustable scraper coacting with the supply roller to regulate the thickness of a layer of ink thereon, the supply roller transferring to the inking roller a uniform film of ink above the surface of the supply roller, augmented by ink in the minute grainings, and means tor translating the carriage past the plate to be inked to transfer ink directly thereto from the plate inking roll without further working of the ink.

2,151,838. SINGLE-REVOLUTION CYLINDER PRINTING PRESS. Artur Buttner, Heidelberg, Germany, assignor to Schnellpressenfabrik Aktiengesellschaft Heidelberg, Heidelberg, Germany. Application February 26, 1937, Serial No. 128,000. In Germany February 26, 1936. 4 Claims. (Cl. 101—278.)

1. A single-revolution cylinder printing press comprising in combination, a continually rotating impression cylinder and a reciprocating form bed, a gear drive for rotating the cylinder in such direction that the printed sheets are delivered at the upper side of the impression cylinder, a feeding table, feeding means located near the lower side of the impression cylinder and arranged between the latter and the feeding table, the feeding means being adapted to transfer the sheet to be printed from the feeding table to the impression cylinder so that turning over of the printed sheet is avoided, means driven from the impression cylinder for intermittently driving the feeding means, and delivery means for conveying the printed sheet from the upper side of the impression cylinder to a delivery pile.

2,152,027. SUCTION CLEANER FOR BAG PRINTING MACHINES. Harry Carll, Tacoma, Wash. Application July 26, 1937, Serial No. 155,713. 2 Claims. (Cl. 101—425.)

2. In a bag printing machine a rotating printing roller, belt mounting rollers, a belt mounted for travel about the rollers and upon which bags may be carried flatly to the printing roller, means for driving the belt and the printing roller, feed rollers associated with the belt, means mounting the feed rollers and actuated in timing with the rotation of the printing rollers to raise and lower them against the belt, and a suction shoe mounted by the feed roller mounting means to raise and lower the shoe accordingly from and against the belt; the shoe having a mouth across which bags are delivered by the belt to the printing roller.

2,152,263. METHOD AND APPARATUS FOR PREVENTING OFFSET IN PRINTING. Theodore E. Knowlton, New York, N. Y. Application April 28, 1930, Serial No. 447,962. 20 Claims. (Cl. 101—420.)

1. A method of preventing offset in printing characterized by printing a blank sheet upon one face, supporting the sheet on a foraminated woven layer, and then printing the sheet on the reverse side.

2,152,698. PRINTING PRESS. Abel Kluge and Eneval Kluge, St. Paul, Minn., assignors to Brandtjen & Kluge, Inc., St. Paul, Minn., a corporation of Minnesota. Original application December 30, 1932, Serial No. 649,567. Divided and this application July 23, 1937, Serial No. 155,237. 14 Claims. (Cl. 101—300.)

1. Inking mechanism for a printing press having a pivotally supported bed, a platen, a side rod connected with the bed for rocking it toward and from the platen, an eccentric embodied in the connection between the rod and bed, grips for feeding sheets to the platen to be printed, and means actuated through the grips, in the absence of a sheets in their grasp, for turning the eccentric out of impression effecting position and, in the presence of a sheet, for turning the eccentric into impression effecting position, the inking mechanism comprising form rollers, an ink plate, and an oscillatory ink fountain having a feed roll, the fountain being interposed between the ink plate and the position on the bed occupied by a form, means for moving the form rollers back and forth over the ink plate and the form on the bed, and means for advancing the ink fountain to locate the feed roll thereof in position to be engaged by the form rollers in their travel from the form to the plate and for retracting the fountain to withdraw the feed roll into position clear of the form rollers on their return from the plate to the form, and means associated with the side rod and eccentric for rendering the fountain moving means inoperative to advance the fountain, when the eccentric is turned out of impression effecting position.

2,152,736. PRINTING MACHINERY. Walter E. Hamlin, Cleveland, Ohio, assignor to The Cleveland Shopping News Company, Cleveland, Ohio, a corporation of Ohio. Application October 29, 1936, Serial No. 108,239. 3 Claims. (Cl. 270—77.)

3. In an apparatus having means for applying ink impressions to paper and folding means therebeyond including a folder finger and a rotary shaft to which the folder finger is secured and a pinion secured to the shaft, together with a rotary carrier in which the shaft is mounted, means for cleaning the folder finger and means inhibiting binding of the folder finger, including a pair of cleaner rollers positioned at a point adjacent the carrier and mounted loosely without positive rotation, and resilient means urging the cleaner rollers together.

2,153,325. PRINTING MACHINE. Herbert Cole, New York, N. Y. Application August 8, 1936, Serial No. 94,925. 11 Claims. (Cl. 101—416.)

1. In a printing press of the type comprising a platen, a conveyor and sheet receiving means; means for effectively drying and setting the ink upon the sheets, the means including a rod-like source of radiant heat transversely across the conveyor, contiguous thereto and between the platen and the receiving means, and a condenser reflector associated with the source for playing the heat upon a localized region of the sheet in the course of its travel therepast.

2,153,959. PRINTING MACHINE. Albert J. Horton, White Plains, N. Y., assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application August 3, 1937, Serial No. 157,131. 8 Claims. (Cl. 101—157.)

1. In a rotary intaglio printing machine, a doctor blade adapted to reciprocate longitudinally along and in contact with the peripheral surface of a printing cylinder, a flange extending over each end of the cylinder and terminating at a point spaced from the blade edge in contact with the cylinder, and an ink guard supported at each end of the blade, extending from the blade to the flange in contact with the peripheral surface of the printing cylinder therebetween, and reciprocating with the blade.

2,153,979. SHEET FEED ROTARY PRINTING PRESS. William K. Eckhard, Westerly, R. I., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a corporation of Delaware. Application November 17, 1937, Serial No. 174,927. 10 Claims. (Cl. 101—233.)

10. In a sheet feed rotary printing press, two sets of front sheet guide and primary detector fingers located at opposite sides of the press, a secondary detector finger located between the sets of primary detector fingers, and a tripping mechanism operated by the primary and secondary detector fingers, the tripping mechanism including a cross rock shaft

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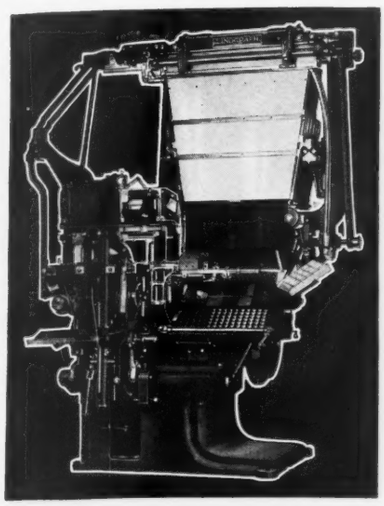

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Don't allow yourself to be cheated by certain persons who are worried by the industry's enthusiastic endorsement of the biggest advance in recent typesetting history.

These are FACTS!

- 1. LINOGRAPH has an unbroken record of 26 years of typesetting machine design and production. We have never been in bankruptcy. We are in business to stay.
- 2. LINOGRAPH invites point by point comparison on material quality, precision manufacture, smooth performance and lasting stamina. We challenge the field on every test of value.

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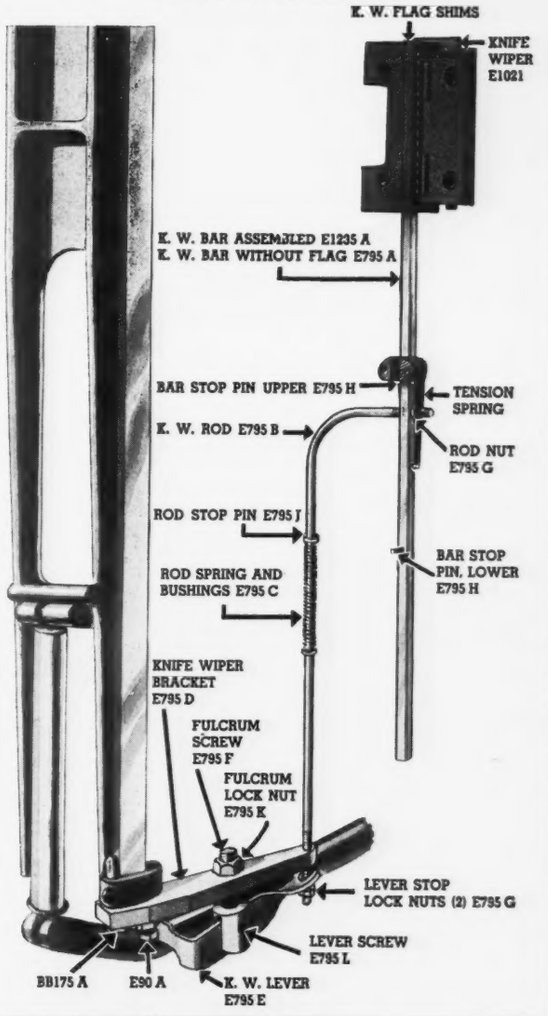
K. W. FLAG SHIMS
KNIFE WIPER E1021
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BAR STOP PIN UPPER E795 H
TENSION SPRING
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ROD NUT E795 G
ROD STOP PIN E795 J
BAR STOP PIN, LOWER E795 H
ROD SPRING AND BUSHINGS E795 C
KNIFE WIPER BRACKET E795 D
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If you can't beat this record you should change to ACE BELTS for Linotype and Intertype machines.

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We never stand still,—and as a result,—the above products, within the past year, have been vastly improved. . . . Convince yourself by sending us a trial order . . . backed by a **Guarantee** that is a **Guarantee:** namely:—**YOU USE THE PRODUCT AND IF UNSATISFACTORY, RETURN SAME AND WE WILL REFUND YOUR MONEY** . . . You can't go wrong. What more can we offer?

• COYNE & PADDOCK INC. •

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and arms fixed thereon, and means for moving the primary and secondary detector fingers into the paths of the arms to limit their rocking movement.

2,154,544. INKING MECHANISM. Auburn Taylor, Charleston, W. Va., assignor to The Goss Printing Press Company, Chicago, Ill., a corporation of Illinois. Application March 5, 1937, Serial No. 129,134. 21 Claims. (Cl. 101—350.)

1. A supplementary ink fountain including in combination a trough, a plurality of narrow faced members rotatable therein, a roller connected to rotate the members, the roller having at least a portion of its face lying on a line with the periphery of the narrow faced members whereby they may both be contacted with a rotating ink drum.

2,154,757. PRINTING MECHANISM. Harold S. Labombarde, Nashua, N. H., assignor to The International Paper Box Machine Company, Nashua, N. H., a corporation of Maine. Application January 19, 1935, Serial No. 2,560. 6 Claims. (Cl. 101—177.)

1. In a high speed printing machine, the combination with an impression cylinder of a coacting blanket cylinder to receive one or more printing images extending in circumferential arrangement about the cylinder for printing a succession of individual blanks means for moving the respective blanks in a substantially straight line between the cylinders, each in timed registry with a printed image on the blanket cylinder, and a positively actuated continuously rotating stripper means located close to the periphery of the blanket cylinder and beyond and above the point where the blanks are imprinted with the images and acting to engage the forward edge of the blank and force it downwardly so that the entire blank is substantially horizontal during the printing operation.

2,155,353. MULTICOLOR PRINTING PRESS. True M. Avery, Glens Falls, N. Y., assignor to Union Bag & Paper Corporation, Hudson Falls, N. Y., a corporation of New Jersey. Application December 12, 1936, Serial No. 115,622. 16 Claims. (Cl. 101—182.)

1. In a multi-color printing press, the combination of an impression roller around which a web to be printed is adapted to pass, a plurality of printing cylinders common to and cooperative with the impression roller to print such web, one or more of the printing cylinders being capable of being rendered inoperative upon the web, a source of supply for the web, and means driven continuously with the impression roller for drawing the web from its source of supply and feeding it to the impression roller in conformity with the surface speed thereof independently of the action of the printing cylinders on the web.

2,155,354. INKING MECHANISM FOR PRINTING PRESSES. True M. Avery, Glens Falls, N. Y., assignor to Union Bag & Paper Corporation, Hudson Falls, N. Y., a corporation of New Jersey. Original application December 12, 1936, Serial No. 115,622. Divided and this application November 1, 1937, Serial No. 172,298. 1 Claim. (Cl. 101—349.)

In a printing press comprising a frame, and an inking roller having its shaft mounted to rotate and reciprocate axially therein, a worm fixed on the shaft of the inking roller, a casing mounted revolubly but immovably axially on the inking roller shaft, the casing being closed at one side and having an opening in its opposite side, a stud shaft fixed in the closed side of the casing and projecting into the opening, a worm wheel mounted revolubly on the stud shaft and meshing with the worm, the casing wholly enclosing the worm and worm wheel and the worm wheel having a hub extending outwardly through the opening in the casing, a crank fixed to the exterior end of the hub of the worm wheel, a link pivotally connected to the crank and to the frame, and a guide pin fixed to the frame and extending parallel to the inking roller shaft and slidably engaging the casing for guiding it.

2,157,256. INKING MECHANISM FOR PRINTING PRESSES AND THE LIKE. Joseph Calcaterra, Thornwood, N. Y. Application September 28, 1937, Serial No. 166,110. 7 Claims. (Cl. 101—349.)

1. In an inking mechanism for printing presses and the like, the combination of a distributor roller, a redistributor roller in rolling contact therewith, the redistributor roller being less than half the length of the distributor roller, and means for positively and continuously reciprocating the redistributor roller along substantially the entire length of the distributor roller throughout the operation of the press and at least once for four impressions of the press.

2,157,440. PRINTER'S ROLLER. John Streckfus, Louis Schmidt, and Harry Godwin, Baltimore, Md. Application September 6, 1938, Serial No. 228,596. 4 Claims. (Cl. 91—67.8.)

1. A printer's roller comprising a stock, a glue composition surrounding the stock, cords running lengthwise of the glue composition, and a rubber outer surface surrounding the roller and bound to the cords.

2,157,489. OFFSET ROTARY COPYING MACHINE. Leo Kluitmann, Dusseldorf, Germany. Application July 21, 1937, Serial No. 154,894. In Germany July 24, 1936. 7 Claims. (Cl. 101—144.)

1. In an offset copying machine, a printing cylinder, means for securing a foil on the printing cylinder, an offset cylinder, the combination of means operatively connected to the printing cylinder for moving the offset cylinder into and out of active position with respect to the printing cylinder, with means for cleaning the offset cylinder when it is in inactive position.

2,157,587. INK FOUNTAIN. Herbert C. Behrens, Battle Creek, Mich., assignor to The Duplex Printing Press Company, Battle Creek, Mich., a corporation of Michigan. Application December 6, 1937, Serial No. 178,419. 8 Claims. (Cl. 101—364.)

1. In an ink fountain, a bowl, an ink roll, a shaft extending beyond the fountain end, a ratchet fixed on one end of the shaft, a member loosely mounted on the shaft adjacent the ratchet, pawls carried by the member and engaging the ratchet to drive the ink roll, means for driving the member; and a detachable member adapted to be manually engaged with the roll and when so engaged to disengage the pawls and whereby when so engaged the roll can be manually rotated independently of the driving means.

2,157,621. PRINTING CYLINDER. John P. E. Neilson, Quincy, Mass., assignor to Meisel Press Manufacturing Company, Boston, Mass., a corporation of Massachusetts. Application March 29, 1938, Serial No. 198,653. 5 Claims. (Cl. 101—415.1.)

1. A cylinder having a gap, a cylindrical bearing inwardly of the gap, a shaft rotatably mounted in the bearing and receiving a substantially continuous support therefrom throughout its length, one edge of the gap being crenellated, and a bar carried by the shaft to engage the edge of a flexible sheet for application to the cylinder and having projections corresponding to the crenels and adapted to be retracted therein to provide a clearance in the gap, the bar having an outer face which, when the shaft is turned in a direction to carry the engaged edge of the sheet away from the edge, moves to a position lying in the surface of the cylinder.

2,157,803. PRINTING PRESS. Harry George Rogers, Wellington, New Zealand. Application September 23, 1936, Serial No. 102,204. In New Zealand September 28, 1935. 11 Claims. (Cl. 101—272.)

1. In a printing press, a frame, a stationary printing bed, a carriage movable over the bed, an impression cylinder mounted in the carriage, pairs of oppositely acting oppositely arranged telescopic tubes, one of the tubes of each pair being attached to the frame and the other tube being connected with the carriage whereby one pair of tubes during expansion moves the carriage always in one direction and the other pair of tubes during expansion moves the carriage always in the reverse direction, and means for alternately supplying fluid under pressure to the pairs of tubes.

Dionne Transferred to Missouri

M. C. Dionne, Intertype representative in Kentucky, has been transferred to Missouri to replace the late Frank Hill. Mr. Dionne will make his headquarters at St. Louis, and for the time being will continue his activities in his Kentucky territory as well as in his new Missouri territory.

Friends are MADE for your paper by inviting appearance and easy reading quality. Sensitive, easy molding Certified Mats contribute to both.

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For dependable stereotyping, rely on Certified Mats, made in the U. S. A.

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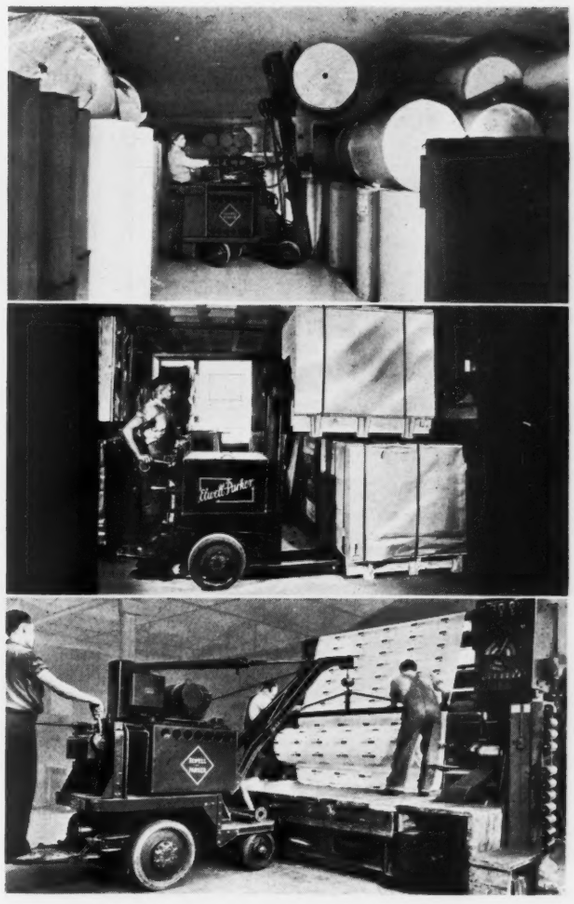
DRY MATS



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that your paper-handling costs can be reduced sharply—*permanently!*

In many publishing plants, methods of unloading, warehousing and rehandling paper in rolls are so wasteful that they cut deeply into profits.

Are you sure that *you* are handling paper most economically? If so, fine! If not—

Will you dare Elwell-Parker to *prove* that your paper-handling costs can be reduced?

Will you co-operate with Elwell-Parker Engineers in making an analysis of paper-handling conditions in your plant?

And will you study their unbiased conclusions with an open mind?

Be assured this will be a wise move on your part—because Elwell-Parker was first to develop Power Industrial Trucks for paper-handling—has had the broadest of experience, and builds a wide variety of specialized equipment for the paper industry for handling roll and flat paper stock.

Write or wire COLLECT—start benefitting without delay by the big savings that Elwell-Parker can doubtless create for you. The Elwell-Parker Electric Company, 4517 St. Clair Avenue, Cleveland, Ohio.

ELWELL-PARKER *Power Industrial* TRUCKS

ESTABLISHED 1893 • BUILDING POWER INDUSTRIAL TRUCKS SINCE 1906

Liner-Saver Device Prevents Operator Sending In Lines on Linotype Until He Changes Ejector

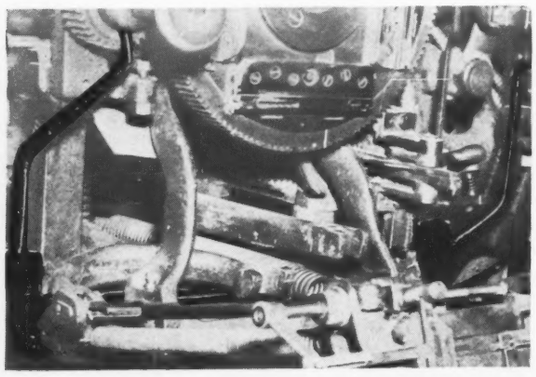
THE Liner-Saver, developed by Joe V. Whitmer of the Santa Monica (Calif.) *Outlook*, and upon which a patent has been allowed, is intended to prevent the operator sending in a line on a Linotype machine unless he has made the ejector blade change to correspond to a change in the mold.

Principally, the Liner-Saver consists of a horizontal shaft mounted on the machine frame, below the justification levers and immediately back of the metal legs. On each end of the shaft are mounted two upright levers, one of which contacts the outer face of the mold turning pinion and the other which functions to lock the assembling elevator by means of a latch in case the operator has neglected to change the ejector after changing the mold. The assembling elevator latching mechanism is so arranged that when the mold turning pinion is drawn forward to change the mold, a locking lever is latched forwardly to prevent the assembling elevator being raised by the operator. When the operator finds he cannot raise the assembling elevator, he resets the ejector to the proper length blade. Resetting the ejector blade automatically releases the latch from the assembling elevator.

The left-hand operating lever is carried in a bearing bracket which is mounted under the two cap screws securing the mold gear arm support to the machine frame.

The right-hand locking lever bearing carrying the latching mechanism, is mounted on the ejector lever bracket retaining screws. No alteration of the machine is necessary.

Mr. Whitmer states the presence of the device on the machine in no way interferes with normal motions of the operator and only functions when the operator neglects to change the ejector after changing from one mold to another.



Whitmer Liner-Saver functions to prevent operation of Linotype casting mechanism if operator neglects to set ejector when changing mold.

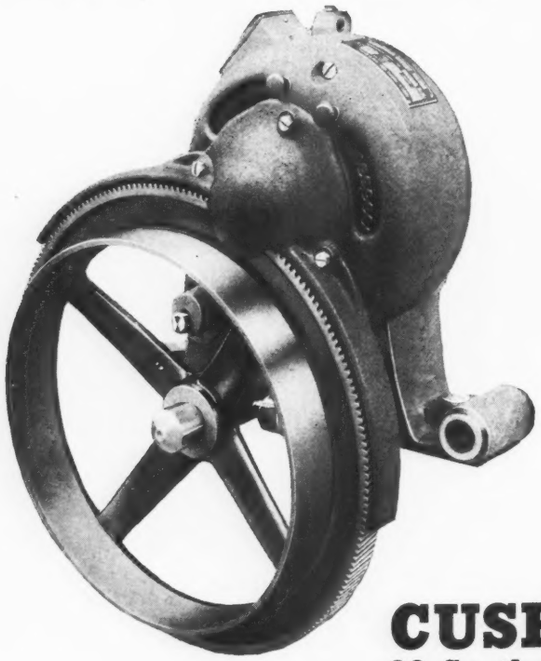
Editor's Silver Anniversary Edition

The Monday evening, May 1st, Kinston (N. C.) *Daily Free Press* was issued in celebration of Editor H. Galt Braxton's 25 years association as editor and publisher of the *Free Press*. The edition consisted of 44 pages in four sections. Considerable of the material appearing in the edition was devoted to civic and historical affairs in and about Kinston. Many of our readers are acquainted with Mechanical Superintendent J. Paul Horton, and those who received a copy of this issue will recognize his portrait along with the entire business and production personnel reproductions which appear in the second section.

Two Intertype Publications

The installation of 12 multi-magazine Intertypes in the new Library of Congress unit of the Government Printing Office has been illustrated and described in a 12-page booklet. Intertype Corporation also has about ready for distribution a three-color booklet called *Forty-two Ideas for the Specialty Printer*. This booklet shows a large assortment of new Intertype faces made particularly for the specialty house. Copies may be secured by writing to the corporation's headquarters at 360 Furman Street, Brooklyn, New York.

THE HEART OF THE TYPESETTING MACHINE



The heart of any typesetting machine is its motor, and if that motor is the Cushman Offset Motor—your plant can count on many years of trouble free, economical service. Here are the reasons why the Cushman Offset Motor is a favorite in hundreds of newspaper composing rooms:

1. It consumes a minimum of power.
2. It is more readily accessible.
3. It is sturdy and dependable—a truck horse for work.
4. Operating costs are lower with this motor.
5. It is easily adjustable and trouble free.

Try a Cushman Motor in your plant. Send for a trial motor today.

CUSHMAN ELECTRIC CO.

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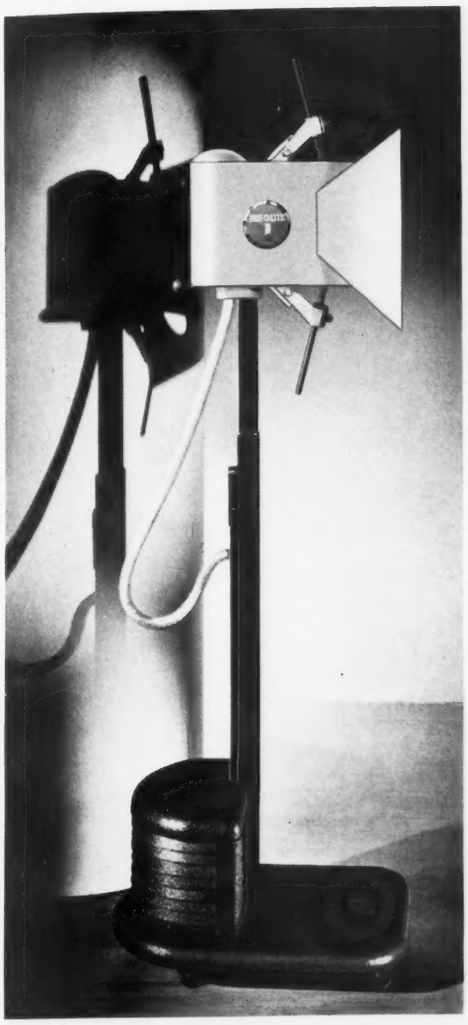
for Close Quarters



Heli-O-Lite "35"

A camera lamp that's close-coupled . . . compact . . . requires 45% less space from front to back—A lamp that's streamlined and beautified . . . with a patented circuit giving evenness of illumination impossible with other lamps and a "stepped-up" scientific reflector which combine to deliver more "deep-biting" light . . . That's the new Heli-O-Lite "35" open flame arc lamp. For specifications write to The C. F. Pease Company, 2638 West Irving Park Road, Chicago.

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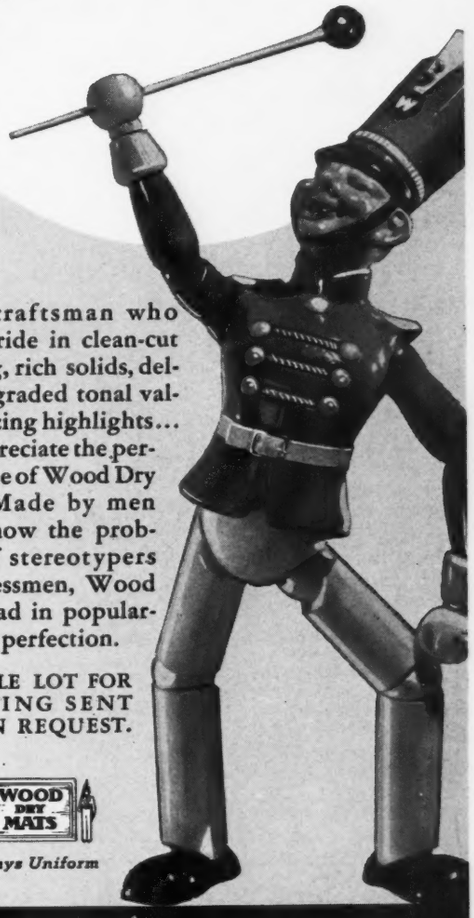
A REVELATION IN REPRODUCTION!

★ Solid Blacks
★ White Highlights
★ Brilliant Halftones

it's the MAT that has EVERYTHING!



Every craftsman who takes pride in clean-cut printing, rich solids, delicately graded tonal values, blazing highlights... will appreciate the performance of Wood Dry Mats. Made by men who know the problems of stereotypers and pressmen, Wood Mats lead in popularity and perfection.

SAMPLE LOT FOR TESTING SENT UPON REQUEST.

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Always Uniform

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"AQUATEX" SEAMLESS COVERING FOR LITHOGRAPHIC AND OFFSET ROLLERS

WILLIAM P. SQUIBB, PRES.

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ALL KINDS *of* ROLLERS, ALL GOOD *and* TRUE

Employment and Service

Employers, production and mechanical executives may insert notices in this department.

Items for this department may pertain to the following subjects: "Executive Wanted," "Association or Partnership Wanted," or "Position Wanted," readers referring to subjects of a personal nature such as obtaining information about addresses of executives, supplying copies of technical articles and magazines, patents for sale or requests for contacts for developing and/or financing of inventions.

Any reasonable request from an employer or mechanical executive for the printing of a notice upon a subject other than the ones listed above will be granted.

Notices may be printed under the following regulations: First insertion (maximum six lines) is free of charge. All subsequent insertions of the same item subject to a charge of 75c per line in advance.

Address all communications with box number to *Printing* EQUIPMENT *Engineer*, 1276 West Third St., Cleveland, O.

WORKING FOREMAN—Wants situation on daily or weekly Pacific Coast newspaper. Competent printer, fast on machine; sober, conscientious; available anywhere; 31; married. Reply Box 75.

Simple Gauge for Cutting Base Material

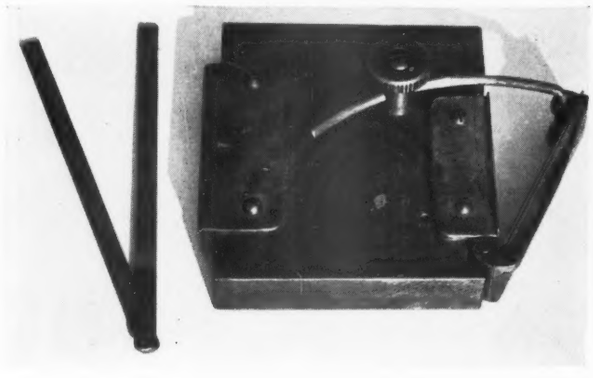
Composing Room Superintendent George Stone of the Atlanta (Ga.) *Constitution*, has devised an angle gauge for application to Miller saw-trimmers for cutting stereo, Monotype or Elrod base material for advertising composition. The application of the gauge will be readily understood by those familiar with operation of the Miller saw-trimmer, and any detailed explanation is unnecessary.

In use, the gauge is placed on the sliding table against the pica measure gauge. A lip at the left side of the angle gauge anchors the gauge body to the pica measure gauge on the sliding tabel of the saw. The adjustable arm is hinged at the lower right side of the gauge body and is free to swing quadrant fashion after the knurled thumb screw is released when it is desired to set the arm to a new angle.

The body of the gauge was cut from stereotype base and trimmed down to approximately double-column (24½ pica) dimension.

At the left of the illustration will be seen a protractor with which angles are transferred from either the advertising layout or the recess in the actual composition which it is desired to fill with basing material cut to the proper angle. The protractor is made from two hack saw blades. The teeth have been ground off. The blades are joined together at one end with a rivet to permit setting the protractor. The swinging arm on the angle gauge may be set by transferring the angle from layout to gauge with the protractor.

As will be noticed, a lip or flange projects from the top edge of the adjustable swinging arm. When the operator is cutting an angle, a slight pressure of his fingers upon the lip holds the base securely against the arm while the saw is cutting the base material.



Gauge and protractor devised by Superintendent George Stone of Atlanta Constitution *for cutting angles on Miller Saw-trimmer.*

Operating Problems

Of small and medium size dailies discussed with respect to blankets, rollers and ink

By EARL P. LACURE*

THE subject given me is "Operating Problems of the Pressroom of Small and Medium Sized Dailies." Consequently, we will consider problems common to tubular and semi-cylindrical types of rotary presses. We have four major problems to consider—blankets, rollers, newsprint and ink. Taking them in order, stereotyping is as important a factor in the kind of blenket to use, the amount of impression carried, and the life you will get from your packing as anything connected with the pressroom. In regard to the kind of packing to use I believe this should be worked out by the pressman to fit his own conditions, being governed by the plates he gets from the stereotyping department and condition of cylinder bearings on the press. If he is getting uniform plates and the bearings are not badly worn a harder packing can be used with less impression to give the pressure necessary to force the ink into the paper. The result will be a clear, sharp and well-printed paper with less wear on the bearings, a smoother running press, longer life to the packing and savings in power. If these plates are not uniform he will need a softer packing, and carry more impression. The print from this packing will not be as clear and sharp. In most of the smaller plants we find this soft packing is necessary due to the stereotyping. I do not think enough attention is given to the Stereotype Department in these plants. Now I do not mean by this statement that the stereotyper lacks ability or is not progressive, for of all the departments in the small plant he is faced with the most problems. If we keep in mind that the reproduction can be no better than the original, we will see to it that all matter going into the forms is in first-class condition. Now we know the average daily cannot equip its plant with the latest plate making machinery but a good storage box for mats, a good scorcher and shaver for flat casts are necessities. Worn bearings or parts on a press may be overcome by adjustments but this is not true in a plate-making machine. If the pressman is required to carry excessive impression to bring up low or uneven plates he is faced with troubles. There will be more strike-through, poorly printed first impressions and uneven pull on the webs.

While on the subject of packing we should consider the proper amount. My company recommends for its presses not more than 0.176 in. nor less than 0.169 in. I might mention here two extremities in packing I have run into in the field and the trouble caused. In one plant where the packing was 0.181 in. the trouble was in feeding paper too fast for the drag roller, causing the web to run out and flood over the former board and with plates creeping or working towards the margin bars on the plate cylinders. The other example is where the presses were underpacked nearly 0.020 in. The trouble was poorly printed halftones. The surface speed of the plates was greater than the impression, causing the plates to scuff the print; that is, the ink on the dots would slur and halftones were dull and hazy looking.

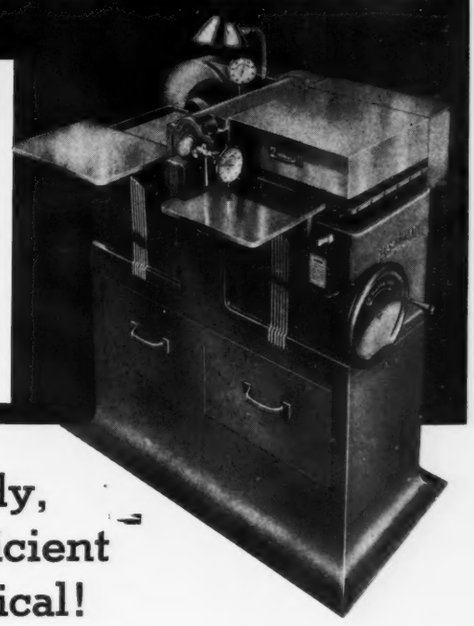
A great many plants today are equipping with rubber rollers or are replacing composition with rubber. There have been many improvements in recent years in rubber rollers and no plants need hesitate in changing to them at least on rotary presses. It should not be necessary to set rubber rollers more than — in. on the drum and plate, but in this we have to consider uniform plates again. Light setting of rollers will give clean, sharp print and save time in the stereotype department. If rollers are set properly and mats carefully packed there should be no need of hand or router finishing of plates more than on the head and tail ends. With *k* light setting of rollers we also save wear on the roller bearings and stocks as well as use less power. It is necessary to grind rubber rollers when they swell or become damaged by type but very lettle is experienced if they are properly adjusted.

I have heard complaints from some pressmen where rubber rollers were used for the ductors in not picking up the ink from the fountain roller. There are two ways to overcome this. Ductor rollers can be grained when regrinding or use a canvas covered roller. We would not advise too rough a finish as there will be a tendency to throw and spray ink. When buying new ductor rollers they can be ordered

Field Expert, Duplex Printing Press Company, Battle Creek, Mich. Abstracted from address delivered at P.N.P.A. Mechanical Conference, Harrisburg, Pa., April, 1939.

IT'S HERE! A New Page Size

PLANE-O-PLATE!



PLANE-O-PLATE
The Rotary Shaver
Now Offered in
2 Sizes
1 For Flat Work up to full page size
2 For Plates and Forms up to 6 columns by 15 in.

Compact, Sturdy, Accurate, Efficient and Economical!

Now, for the first time, Plane-o-plate, the precision rotary shaver for all flat work, is offered in a full newspaper page size. It's price is one any publisher can afford. With two sizes Plane-o-plate meets all printing plant shaving requirements. Install Plane-o-plate to improve quality, speed up work and reduce cost. Shave any plate thickness—"zinc," "shell" or "type-high," either one large plate or a full bed of small plates of any size or shape; all with accuracy and speed. Shave basing material, reshape poor electrotypes to your own standards. Plane-o-plate will reduce cost of difficult angular "ad" construction in your composing room. New "insert" system has reduced cost in many well-known plants. Write fo detailed information.

SOLE SELLING AGENTS IN GREAT BRITAIN, NORTHERN IRELAND AND EIRE—FUNDITOR, LTD., LONDON E.C.1

FEATURES

Rotary helical cutter. Large direct reading dial micrometer. Work light built into machine.

Finely polished bed. Adjustments to 1/1000 of an inch. Automatic hold down bars.

Main body casting in one piece. Strong. Rigid. G.E. motor. Timken bearings. Low power requirements. Dustproof. Totally enclosed. A quality machine at a surprisingly low cost.

MONOMELT CO.
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with grained surface or can be canvas covered. When composition rollers are used, the same care should be taken in adjusting them. While the surface of the roller may be good, do not use them until they become so hard they will not pick up and deliver the ink. I believe too many plants try to use composition rollers over too long a period and then condemn the roller.

The ink used should be adapted to the speed of the press and the news stock used. I believe it is a good plan to send a sample of newsprint to the ink company giving the approximate speed at which you are operating the press if you are having any trouble with the ink, the manufacturer will recommend the best ink for your situation. I have found many pressmen especially on the smaller dailies using too heavy an ink. The ink dries by penetration into the paper and if too heavy a body is used it stays on the surface of the paper, building up on pipe rollers and on second impression blankets, giving a poorly printed first impression and a smear as the paper travels over the pipe rollers and offset from folding rollers.

Patent Changes Hands

The Imperial Type Metal Company announces the recent purchase of United States Patent Number 2,072,817 from Intertype Corporation. This patent relates to the design of a mold for casting pigs of type metal to be used with Margach, Ludwig, Kendall, Streamline, and similar cold metal feeders on line and type-casting machines.

The mold is so constructed that it will cast pigs with a slotted eye which separates and drops off the feeder hook as it melts down to the eye portion of the pig.

Remedying Troubles on Old Machines

By A. H. PRATT*

ON some line-composing machines which have been in use for a very long period, the ejector lever link hinge pin (BB41) cannot be kept tight because the wing screw works loose. I have overcome this trouble by making a hinge pin about ¾ in. longer than standard. The longer pin provides more bearing surface. In place of the regular wing for this pin I use the closed eye wing from second elevator cam roll pin (B9), or you can use the newer style wing from vise closing cam roll pin (BB482) and the shoulder screw known as justification cam roll pin plate screw (D3326).

In writing above about making the ejector lever link hinge pin ¾ in. longer than standard, the equipment I use for turning up the pin may be of interest to those machinists who are not equipped with a lathe. For this purpose I use one of those ordinary polishing heads such as can be obtained in most any hardware store or tool supply house. The chuck on the polishing head shaft takes up to a ⅛ in. round stock. It is surprising what can be done by the machinist with a good file in the way of turning a taper pin, dowel pin or stock for a special screw. The polishing head represents an investment of $1 and the chuck costs 79c.

There are probably some Linotype machines in use today having old-style assembler drive with intermediate clutch knob (C173), of which we have several in our composing room. Occasionally, if the clutching lugs on the knob are not restored to their original condition as soon as worn, the knob by reason of the slanting wear on the lugs, will become disengaged from the driving pulley lugs and the assembler will stop. To overcome the trouble experienced from the knob becoming disengaged frequently, I provide a ¼ in. ball bearing at one end of the clutch spring which rests in a hole in the shaft. To provide a seat for the ball at one end of the spring, a 7/32 in. drill is used to "spot" a depression in one of the knob lugs. Since the drill must be used at an angle, a better detent hole or seat for the ball can be drilled in the knob by first using the drill on one side of one of the lugs and then from the other side to secure a round depression in which the ball will fit while holding the clutch lugs in engagement.

*Machinist, Mobile (Ala.) Press-Register.

Sinclair & Valentine Announcement

It has been announced by Sinclair & Valentine that the company has completed the purchase of all the holdings of the Valentine and Witte interests who have now retired from all activities with the company and its affiliates.

The following officers and directors have been elected for the ensuing year: R. R. Heywood, President; A. J. Math, Executive Vice President and Treasurer; A. J. Mahnken, Vice President in Charge of Sales; S. Wasserman, Secretary and Counsel; and H. H. Desmond, Assistant Secretary.

The Directors are as follows: R. R. Heywood, J. H. Sinclair, A. J. Math and A. J. Mahnken.

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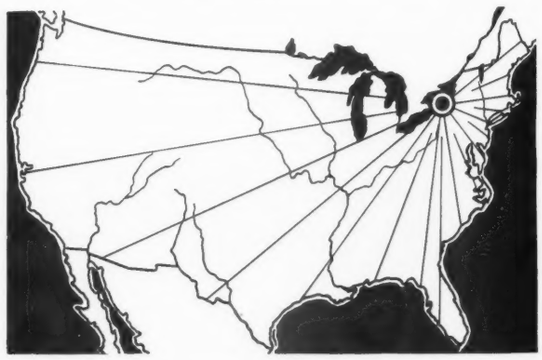

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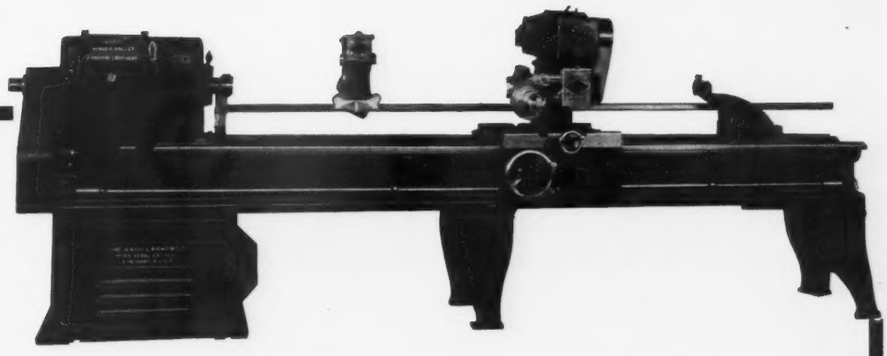

A.N.P.A. Mechanical Conference Offers Chance to investigate Cecil Equipment

If you are attending the A.N.P.A. Mechanical Conference in Philadelphia, you have a marvelous opportunity to study the economy and advantage of refinishing rollers. Three plants, **The Philadelphia Bulletin, The Philadelphia Inquirer,** and **Godfrey Roller Company,** all in Philadelphia—are using Cecil Roller Finishing equipment. We feel sure the executives in charge of this equipment would be glad to tell you of their experiences.

If you are not attending the A.N.P.A. Mechanical Conference, write today and let us give you facts and figures on how the Series "J" equipment shown above can refinish a six inch form roller in one hour and ten minutes. Investigate our new Series "LN" machine—a combined lathe and roller finishing machine. Cut costs in your department. Refinish your own rollers with Cecil equipment.

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Kemp Sales Organization Meet in Baltimore

The sales organization of the C. M. Kemp Mfg. Co. gathered at the factory in Baltimore recently and while there had this picture taken.

Front Row (Left to Right): R. S. Brookman, E. H. Coburn, B. L. Ashdown, W. Wallace Kemp, President; J. P. Flippen, and C. P. Bridges.

Back Row (Left to Right): R. S. Van Note, Assistant Manager Sales, and E. B. Dunkak, Sales Manager, C. M. Kemp Mfg. Co.; E. W. Abrahamson, P. H. Beam, and W. W. Drissen.

Gage's Schedule of Talks

Harry L. Gage, Mergenthaler vice president, is scheduled for many speeches this summer. June 2 he addressed the Atlanta Master Printers Club on "What's Ahead for Printers?" and June 4, the Southern Master Printers, Miami, on "The Responsibilities of the Master Printer."

June 20 and 21, as trustee of Montclair Library, he will attend the convention of the American Library Association, at San Francisco, and will talk at three different meetings, on "Esthetics of Book Manufacture," "Current Problems of Library Administration" and "Cost-Finding Studies in Libraries."

June 27 he will serve as toastmaster at the annual dinner of the fifteenth annual Conference on Printing Education, in New York City, and the next day will preside at a symposium with the Advisory Council on Education in the Graphic Arts.

August 9 he will discuss "Esthetic Aspects of Book Production," at a summer institute for libraries, at the University of Chicago.

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JUSTRITE SAFETY CANS (right) are accepted as the safe, economical way to handle and store explosive and flammable liquids. They're built for endurance—for efficient, trouble-free service—for prevention of leakage and evaporation. What's more—labeled by the Underwriters' Laboratories, approved by the Associated Factories Mutual Fire Insurance Companies—Justrite Safety Cans will reduce your insurance costs! Seven sizes, 1 pint to 5 gallons.

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Bustles were going out . . .

in 1905. And the Kimble idea was already in . . . of a motor built specially for printing presses and such. How much that idea has meant to printers you can see by comparing the equipment of that day and this . . . and the number and variety of machines equipped with the special Kimble Motor today. KIMBLE ELECTRIC COMPANY, 2011 W. Hastings St., Chicago, Ill.

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Ghosts and Streaks

This difficulty is quite common. The inking system on some presses is fairly efficient up to the requirements of forms containing solid areas say sixty per cent of inside chase area. Some presses are not quite so efficient in inking while others are more so.

The press manufacturer will supply the printer with the estimated inking capacity, if requested. Whether the printer gets the information from the manufacturer of by trial, he should keep a record of the capability or each press and equip accordingly as much time and material is wasted trying to print forms requiring a better inking system on presses with limited facilities in this respect.

Even on the larger presses with the best inking systems, this ghosting and streaking occurs at times often to the puzzlement of the pressman.

One remedy sometimes advanced is to set the form rollers harder against the vibrator than the form but this is wrong in theory and dangerous in practice unless the rollers are very firm and the effect of the excessive pressure against the vibrator closely watched. It is better to set the form roller in firm but not excessive contact with both form and vibrator and just what this contact should be depends on the firmness of the roller, the viscosity of the ink, the temperature of the pressroom, together with relative humidity and the speed of the travel of the inking system. Setting the form roller to show a streak from one-sixth to one-quarter inch wide on a type-high ink plate or form is the first step.

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Some help is obtained by placing the solid plate taxing the inking system at the edge of form next to the ink plate, this edge being better supplied with ink.

Another aid is to keep the solid plate somewhat higher than the rest of the form, underlaying it from 0.003 in. to 0.007 in. as required but having the same excess packing on the cylinder, depending on the squeeze needed and the give under impression. You must know the press and feel your way along.

The use of rider rollers helps but the number of form rollers is most important together with the reciprocating vibrators. It is very important that excess composition at the ends does not interfere with the full side play of the form rollers.

Last but not least the form rollers should have ample tack and the ink should have all the tack that can be utilized without causing the ink to pick the paper. It is customary to run ink soft and almost fluid on solid forms. Such an ink cannot be gripped by the composition rollers and it slips between them and the vibrator instead of being spread as it should. If the form rollers are too hard and without tack, the slippage is worse.

If, after these precautions, ghosts and streaks remain, it is time to place the form on another press with better inking facilities.

Jampol Has Moved

It has been announced by H. M. Jampol that The Jampol Company, manufacturers of materials handling systems and press floors for newspaper plants, has been moved to 728-742 61st St., Brooklyn, New York. New home of the Jampol Company also will house the Gillis & Geoghegan Hoist Corporation which is owned by The Jampol Company.

Altering Press

(Continued from Page 42)

The tool post and cutting tool were bolted to the bracket at either end, holes being drilled so it could be attached readily. When bolted to the right end of the bracket the tool post feed was positioned for feeding longitudinally to the left, and when on the left end, the feed was to the right. The depth of the cut was regulated by the position of the cutting tool in the holder, being adjusted in the slot at the finish of each cut.

Two ¾ in. high-speed steel cutting tools were used, one sharpened for left-hand cutting and the other for right-hand cutting. The longitudinal cut was about ¾ in. and the proper depth was reached in about three cuts.

This was the procedure in cutting all 12 cylinders. The work was done by regular pressroom employees.

The center rings had to be cut down. We decided to send these out to a machine shop rather than try to cut them while on the cylinders. We obtained a jig from the factory which we loaned to the machinist for use in setting up the rings in his lathe. A total of 5/16 in. was cut from the center rings. This left them 17/32 in. across the top, which cut into the old screws that held them to the cylinders. New screws were put through the flush part of the ring. We found that some plants had cut these by leaving them on the cylinders. Since

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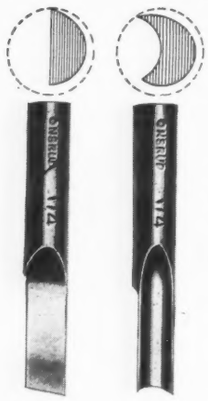

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COMPOSING ROOM NEWS

The New Double-Ear

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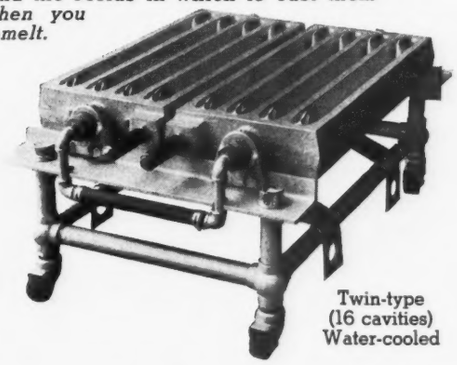
And the Molds in which to cast them when you remelt.



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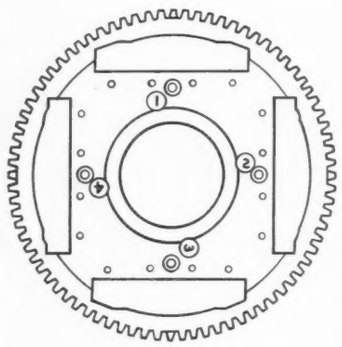

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turning a 60 deg. angle accurately is usually more difficult than straight turning, it is our opinion that this should be cut by a competent machinist, either on or off the press, rather than by a pressman. It is apparent that any inaccurate work here might easily lead to throwing plates at high speed.

Other necessary changes were to cut 1/16 in. off the small clips in the cylinders, which had been cut at some previous time and to cut new slot in drag roller for running tabloid. At the folders we cut off 1/4 in. from each former and 9/16 in. off the nipping rollers. New pin holes were drilled in the cutting and folding cylinders and new slots were made for the pins. Width of trolley fibers were reduced because of the narrower margin and the angle bars were moved.

If the cutting of cylinders with our lathe tool set-up seems confusing to the pressroom executive, I want to suggest that most any machinist would be glad to devise a setup for a press.

A used tool post with feed can usually be obtained either by buying or renting from machinery firms.

Paper roll sizes in use at the Tampa *Times* before the changeover, were 68, 51, 34 in. and the new sizes now in use are 66½, 50 and 33¼ in. The saving in paper is estimated at about 2% of the total paper bill. In a year's time this adds up to interesting totals. All departments contributed to the gain of 1½ in. across four plates, the composing room contributed 14 pts. by changing to 4 pt. column rule, the stereotype department gave us about ½ in. and we obtained the rest in the pressroom. There was no change in page length. Cost of the job was about $600 and a lot of hard work. Future small savings will result in the use of narrower blankets and rollers.

Efficiency

(*Continued from Page 40*)

Individual Group Drives

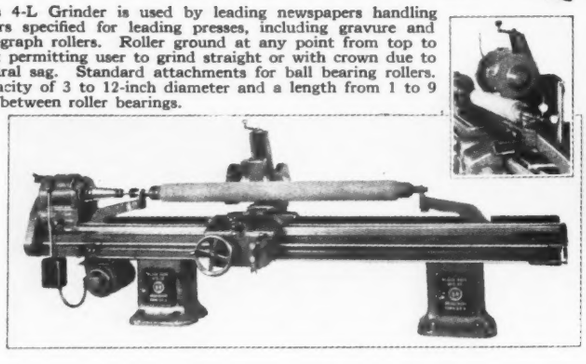
Twenty-five years ago, there was an immense amount of propaganda in favor of individual direct drive. The idea was to eliminate all belts, use gears and on all machines possible couple the motor shaft direct to the drive shaft of the machine through a flexible coupling. In some instances this was carried too far. There is now some difference of opinion in regard to the most efficient drive to use. There are advocates of group drive and there are still advocates of individual drive.

The most efficient drive, all other factors remaining the same, is that which gives the lowest power cost, the interest and depreciation on the investment in motors and driving equipment being included in the power costs. There are a number of disadvantages to belt drive in most kinds of plants. There is belt slippage so that the maximum speed cannot be maintained uniformly unless the belts are so located that it cannot happen there is danger of dust, dirt, and oil being deposited on the work. There are presses where there is no question but that individual drive is the most satisfactory. There is other equipment which must be located in spots where belt drive would be inefficient and unsatisfactory. In these cases there is no question in regard to the drive.

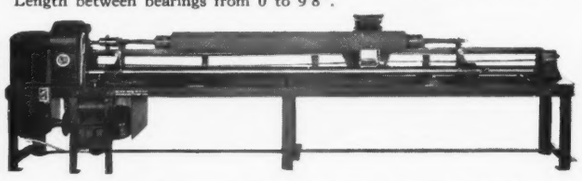
Then, too, there may be a group of presses, each requiring about the same amount of power, presses which are being operated most of the time and are just naturally grouped together. These may often be divided

USE BLACK ROCK EQUIPMENT TO ACCURATELY GRIND AND POLISH ROLLERS

This 4-L Grinder is used by leading newspapers handling rollers specified for leading presses, including gravure and lithograph rollers. Roller ground at any point from top to back permitting user to grind straight or with crown due to natural sag. Standard attachments for ball bearing rollers. Capacity of 3 to 12-inch diameter and a length from 1 to 9 feet between roller bearings.



This 4-R-M Roller Polisher is designed to rapidly and accurately polish rubber rollers coming within specifications given by leading pressmakers. Eliminates laborious, inaccurate hand polishing and maintains dimensions relative to those produced on our grinder. Capacity, 2 to 12 inches. Length between bearings from 0 to 9'8".



Mr. G. L. Hammond will be Registered at the Benjamin Franklin during the A.N.P.A. Mechanical Conference.

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up into smaller groups and one motor used for each of the sub-groups. Where this is the case, it may mean a considerable saving in motor investment and also a considerable saving in power to use group drive.

If overhead shafting is used, it becomes necessary to take precautions against any dripping of oil and the belts and shafting must be so located that there is no interference with the lighting. Usually these problems can be solved in a satisfactory manner.

Any electric motor takes more power when starting than when running continuously. A group of machines, each with its individual motor, which is being stopped and started frequently, will often use more total current with individual drive than when one motor of the right capacity for the group is used to drive all of them. The total power of this group-drive motor does not need to be anything like the total of the power of all the individual motors which would be used.

Since the single motor is running constantly there is not the current loss of frequently starting individual-drive motors. The presses are merely stopped and started and it is likely that all the presses will never be in operation at the same time.

On the other hand where a maximum, uniform speed is a controling factor in the cost of production, individual drive gives the best results. Therefore, it might not work out so well to group hand-fed presses and automatic presses in the same group. A maximum, unifrom speed is not so important in the case of the hand-fed press. It is also being stopped and started frequently. The automatic press on the other hand may be used for a long run and not have to be stopped at all during the working hours. A maximum, uniform speed, a speed as great as the press will stand, is important here. Usually this speed cannot be attained with group drive and belts because of the variation due to belt slippage. The speed has to be stepped down so maximum speed of the drive will not be too great.

Efficiency in Drives

Whether individual or group drive will prove the best, therefore, depends a great deal upon the nature of the machine or machines being driven. In some cases there is a choice. In other cases, if the highest efficiency is to be obtained, there is no choice.

Group drive is correct where there is a group of machines to be driven, each one requiring about the same power that any of the others require, all being used most of the time, and the logical layout being in a group. If a certain definite, uniform speed is not of prime importance then group drive is likely to be more efficient here than individual drive. Even then some local conditions may make a difference.

The point is that there are a number of factors which determine, between them, what is the most efficient method of transmitting power to machines. The most efficient method, in all cases, is the one which gives the lowest production costs. Production costs include labor, power, interest, depreciation and obsolecence on the total investment, rental value of floor space, spoilage, etc. It is easy to overlook one or more of these items of cost and arrive at the wrong conclusion. In an effort to save on the investment or to save power costs one may increase other items of cost enough to make the total high. On the other hand, it may prove a real economy to save on the first cost and the power. This is so if no other costs are increased. In all cases, a thorough study of the problem from all angles is in order.

Hoe Mail Order Roto Press

What is said to be the first press for mail order signature production in the U.S.A., a new Hoe 96-page Super-Production Rotogravure Press equipped with automatic electric running belt web tension device was shipped recently to Kable Brothers Company, Mount Morris, Illinois.

This Hoe 96-page Super-Production Press and magazine folder will deliver high production volume due to high press speeds made possible by uniform electric tension and non-stop paper replenishing.

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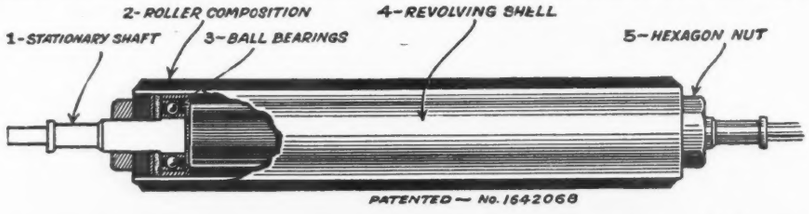

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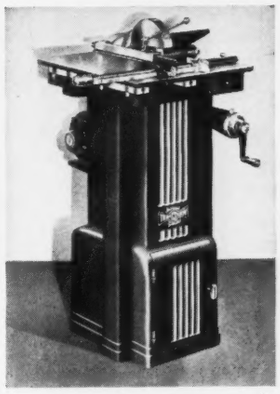

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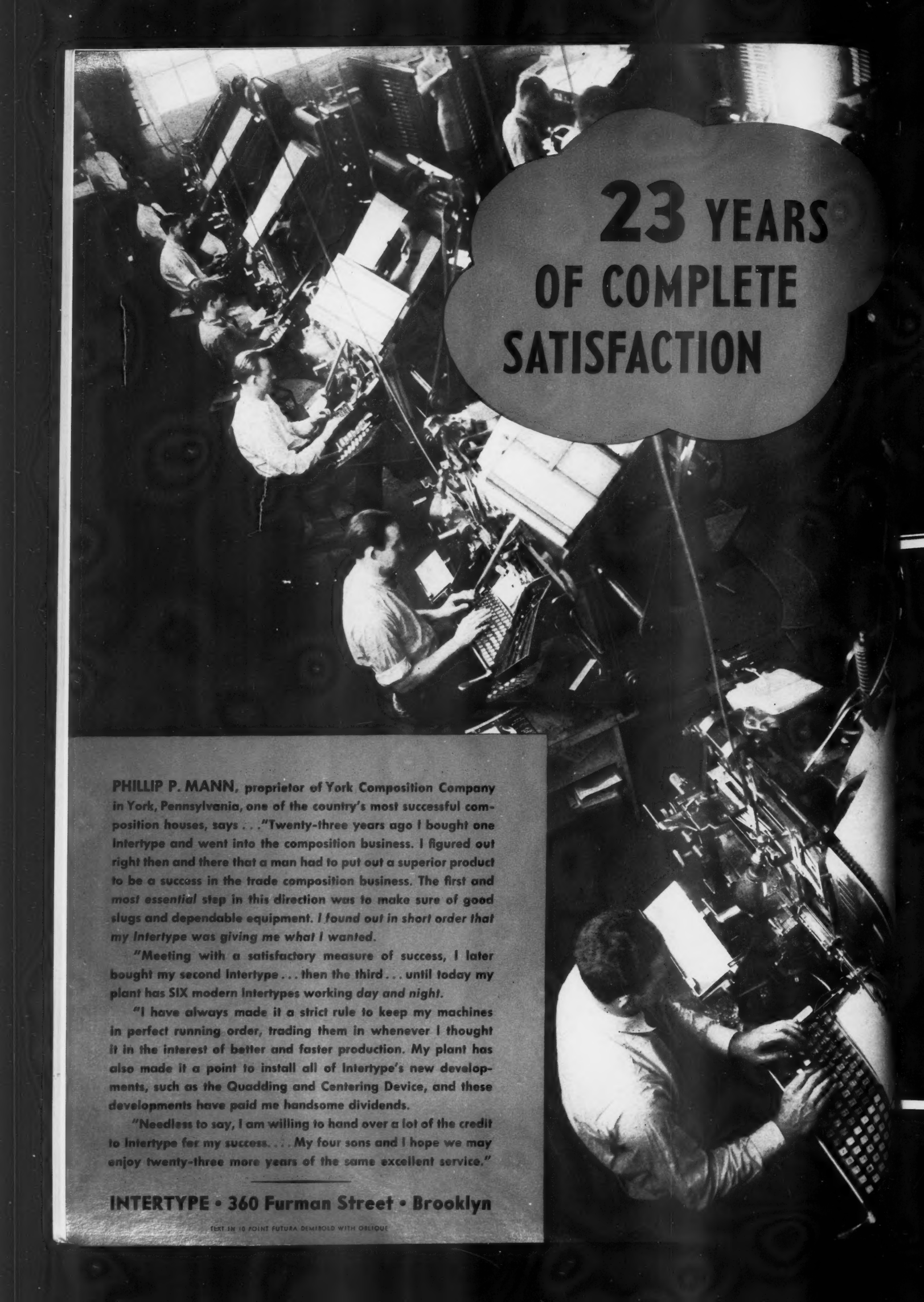

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